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ESTABLISHED 1867.

PARTRICK & CARTER'S

—❖— 1888 —❖—

CATALOGUE AND PRICE LIST.

ELECTRICAL SUPPLIES

MADE, IMPORTED AND SOLD BY

PARTRICK & CARTER,

OFFICES, SALESROOMS AND WORKS:

14 S. SECOND STREET,

PHILADELPHIA, PA.

ANKLIN & CARTER. CHAS. M. WILKINS. E. WARD WILKINS.

1867.

1888.

## TO PURCHASERS.

**I**N presenting this 1888 edition of our Catalogue of **GENERAL ELECTRICAL SUPPLIES**, we respectfully call attention to the fact that our house has been established since 1867, and we claim that our many years experience as manufacturers and dealers has been productive of many improvements that could not suggest themselves to those unfamiliar with the requirements of the trade. The unqualified favor with which our goods have always been received has induced us to greatly increase our already extensive manufacturing facilities. Our house has been for the past Eighteen Years the **LEADING HOUSE OF THE UNITED STATES FOR TELEGRAPH AND ELECTRICAL SUPPLIES**, and we shall continue to keep up the well earned reputation. In this Catalogue will be found illustrated and priced Telegraph, Telephone, and Electric Light Supplies, Electro-Medical Apparatus, Electro-Platers' Supplies, Testing and Experimental Apparatus, and every description of General Electrical Supplies. We will send all **INSTRUMENTS** herein described, of less weight than four pounds, to any point in the United States, by mail, carefully boxed and prepaid, upon receipt of the price given in this Catalogue. This arrangement is a great advantage to purchasers in distant States, who are thereby enabled to obtain their small orders, such as Keys, Sounders, etc., delivery free at net Philadelphia prices. **GLASS CANNOT BE SENT BY MAIL.** To Canada the present limit on the weight of mailable merchandise is eight ounces. Orders by mail for any of the Instruments or Supplies herein described, in large or small quantities, will have as prompt attention as though given in person. We shall be pleased to quote special prices to those who intend purchasing in large lots. When ordering write your address in full, giving county and State, and designate mode of shipment, whether Express or Freight. To prevent loss, remittances should be sent by Postal Money Order, Draft, Registered Letter or Express. Orders for goods to be sent C. O. D. to points far distant from Philadelphia should be accompanied by a remittance of one-third the amount of bill ordered.

FRANKLIN S. CARTER.  
CHAS. M. WILKINS.  
E. WARD WILKINS.

**Partrick & Carter.**

N.B.—In addition to this Catalogue we also issue a Special Catalogue of Annunciators, Burglar Alarms Bells, Gas Lighting, and all supplies for Electric Bell and House Work, which will be sent upon application.—(See yellow leaf in this book.)



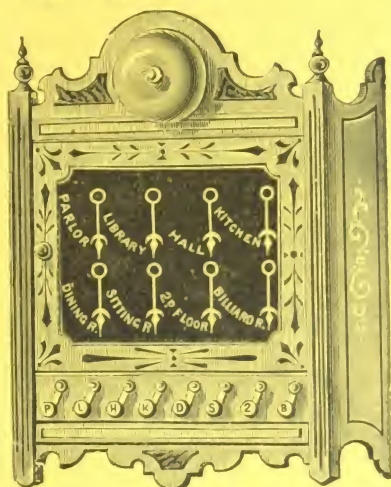
# PARTRICK & CARTER'S ELECTRIC ANNUNCIATORS.

(PATENTED.)

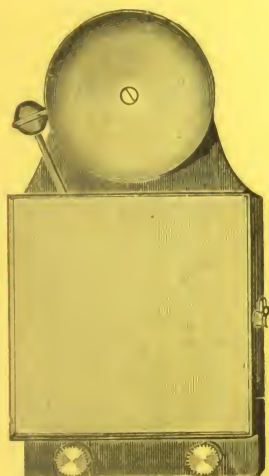
Burglar Alarms, Call Bells, Electric Gas-Lighting Apparatus,  
Push Buttons, Door Pulls, Springs, &c.



HOUSE ANNUNCIATOR.



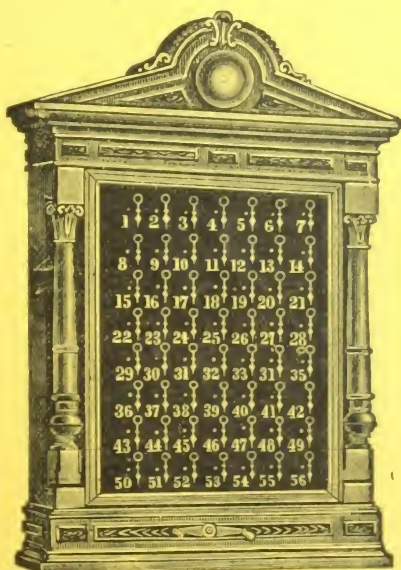
BURGLAR ALARM.



BOX BELL.



CIRCULAR PUSH BUTTON.



HOTEL ANNUNCIATOR.

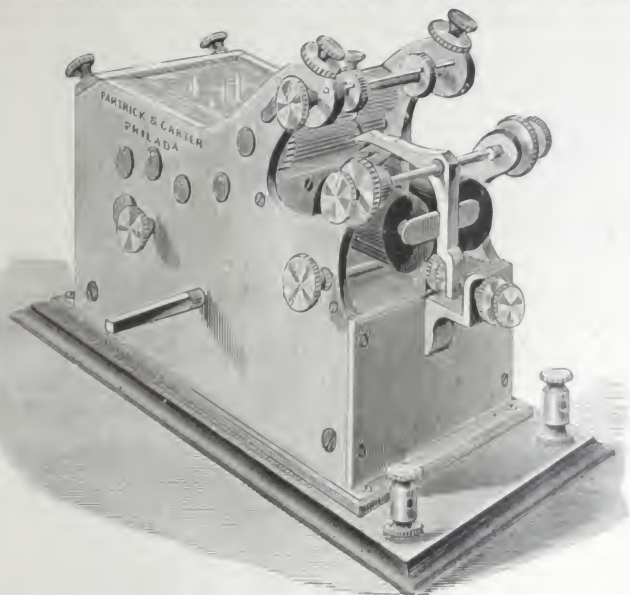
Full and Complete Illustrated Catalogue and Price List of the above, and  
all supplies for Electric Bell and Annunciator Work, furnished upon application.

# ELECTRIC GAS-LIGHTING APPARATUS.



Complete Illustrated Catalogue and Price-List  
furnished upon application.

# EUROPEAN MORSE REGISTER.



STANDARD PATTERN OF SPRING REGISTER (WITHOUT WEIGHT), AS  
ADOPTED AND USED BY SOUTH AMERICAN, CUBAN AND  
MEXICAN TELEGRAPHS.

PRICE, \$60.00.

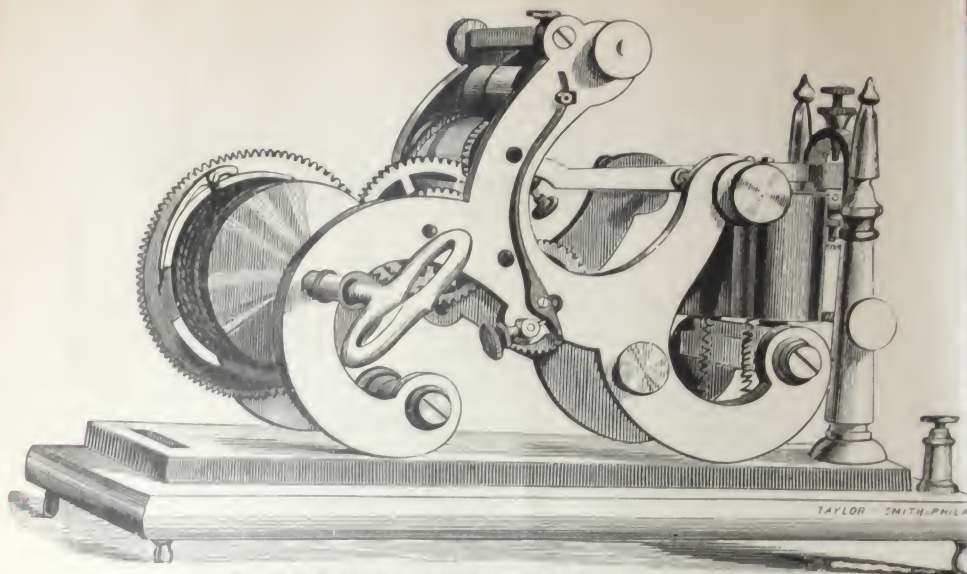
Our European Registers are beautiful in design and finish, and are made to run smoothly at a uniform rate of speed and a greater length of time than any other Spring Register yet introduced. They are perfectly dust-proof, as all the machinery is completely enclosed by heavy FRENCH PLATE GLASS. We warrant them to be equal, if not superior, IN EVERY RESPECT, to any instrument of the kind ever manufactured.

## PRICES.

Morse Registers (spring or weight), regular pattern.....	\$40 00	Paper, per pound.....	\$0 21
Cords, Cat-Gut.....	0 25	" " " by the case...	0 20
Winding Keys.....	1 00	Reels (Adjustable).....	2 50
Weights with Pulleys.....	2 00	" (Finished Brass).....	6 00
Weights without Pulleys.....	1 75	Adjusting Springs, per doz. ....	60

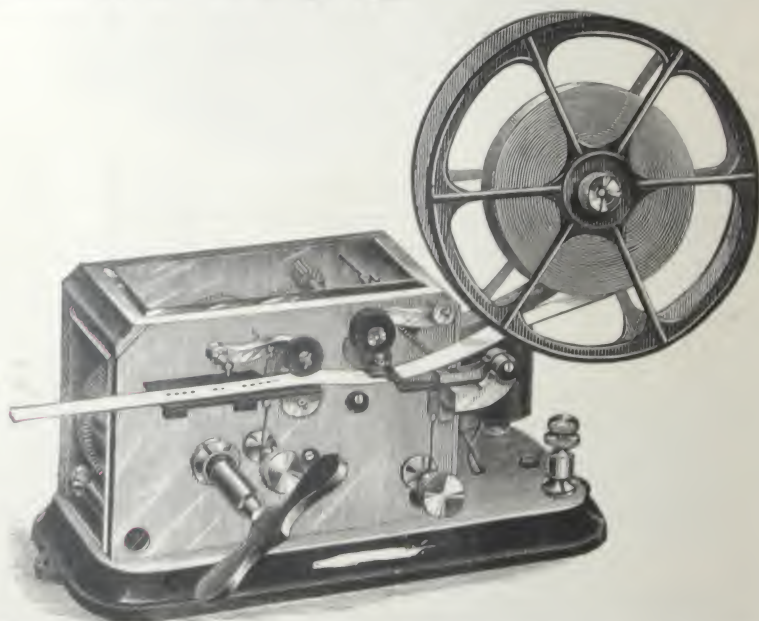
All Instruments nickel-plated for 20 per cent. advance upon list prices.





## STANDARD AMERICAN REGISTER.

These Registers are constructed upon the same principle as our **FAMOUS GIANT SOUNDER**, give as clear and loud a sound while the paper is running as when the machinery is at rest. With spring or weight.



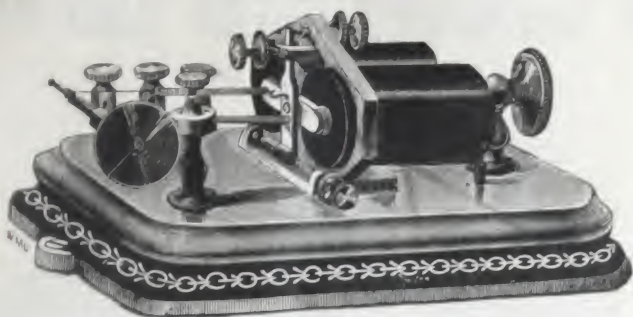
## "Self-Starting" Ink-Writing TELEGRAPH REGISTER.

To create a revolution in the system of Telegraph Registers from the old and original form of stylus puncture, or "blindman's print," to an ink print, required only the invention of a thoroughly reliable instrument to do that kind of work in an absolutely faithful manner.

The handsome, clear, clean-cut dots and dashes blocked out upon the white tape in solid black color by this Register, are greatly admired and impress all who have any experience in this field as being a most valuable acquisition to the **FIRE ALARM** and **DISTRICT TELEGRAPH SERVICE**, in which latter to read at a glance and read correctly is a great advantage.

**THE INK-WRITING REGISTER**, for District Telegraph and Fire Alarm service, is made self-starting. When desired a sample of the print will be sent by mail upon application.

Price, complete, Single Pen., \$45 00 | Price, complete, Double Pen., \$50 00

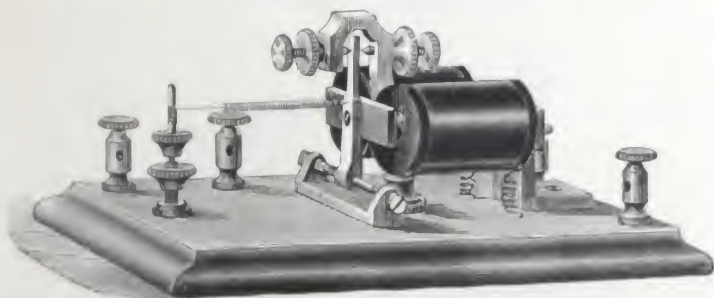


## PARTRICK & CARTER'S

### No. 1 STANDARD RELAY.

PRICE, \$6.50.

Our Standard Relays are made with rubber-covered coils, front and back adjustment, ranging from 150 to 175 ohms resistance. Very sensitive to feeble currents, and are in general use by the United States Signal Service and the principal Telegraph and Railroad Companies throughout the United States and Canada.



### PONY RELAY.

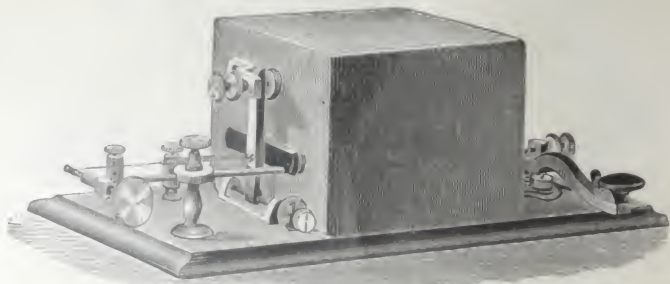
PRICE, \$4.00. With Rubber-Covered Coils, 75 Cents Extra.

The above cut represents our low resistance, or "Pony Relay," as it is generally called; wound from 20 to 50 ohms, and calculated to work splendidly upon lines from 5 to 40 miles in length. It is neatly and substantially made.

## COMBINATION SETS.

No. 1 Standard Relay, Giant Sounder, Acme Steel Lever Key, Lightning	
Arrester, Cut-Out and Ground-Switch combined.....	\$13 00
No. 1 Standard Relay, Acme Steel Lever Key and Giant Sounder Combination.....	12 00
Pony Relay, Premium Sounder and Premium Key Combination.....	7 50
Combination Sets of any Instruments in our Catalogue made to order.	
☛ All Instruments nickel-plated for 20 per cent. advance upon list prices.	

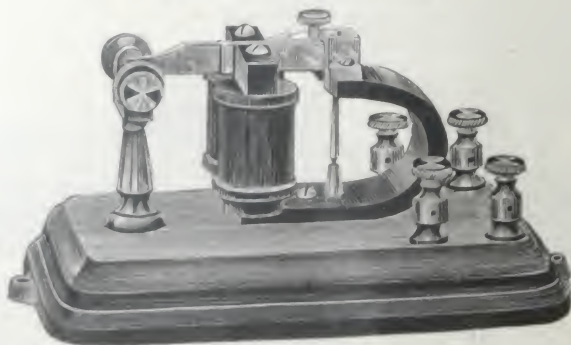
## BOX SOUNDING RELAY AND KEY. COMBINATION SET.



Our Box Sounding Relays give a clear, loud sound, equal to the majority of Sounders that are sold as No. 1. They are very sensitive to feeble currents, and work well upon long lines, and are warranted in every respect. They have no superior.

Price, with Key on base, and wound to 150 ohms with silk wire.....	\$10 00
The same, of 160 to 300 ohms.....	11 00
Without Key, and of 150 ohms resistance.....	7 50
" " 160 to 300 " " .....	8 50

## POLARIZED RELAYS.



POLARIZED RELAY, SMALL SIZE, No. 1, \$5.50.

## DUPLEX TELEGRAPH SETS, COMPLETE.

Any operator can connect them up properly for operation without previous knowledge of duplex operations.

These sets will work up to 250, 300, and in some cases 400 miles. To equip one wire for duplex working requires two sets.

Price for two Duplex Sets, making complete equipment for one wire, with full directions.....\$150 00

## AUTOMATIC REPEATERS.

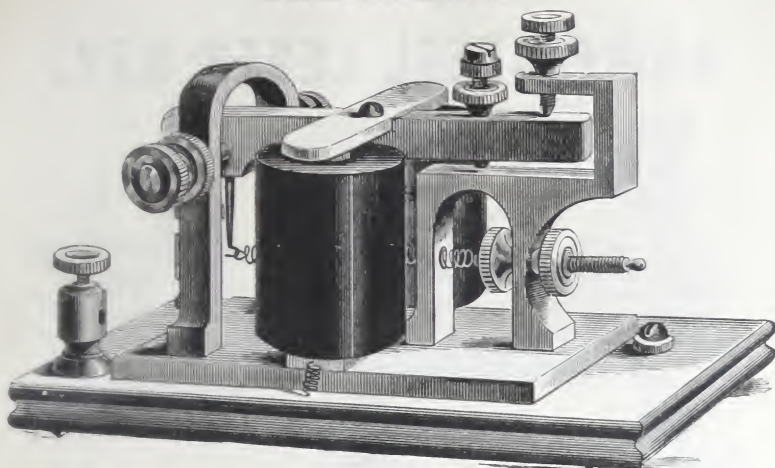
The most complete Automatic Repeater yet offered, and guaranteed to work in all kinds of weather.

Our Repeaters have been adopted by the United States Government, upon the Signal Service Line, wherever a Repeater is required.

† All Instruments nickel-plated for 20 per cent. advance upon list prices.



# SOUNDERS.



## NEW GIANT SOUNDER, PERFECTED.

**PARTRICK & CARTER, Sole Owners.**

PATENTED FEBRUARY 16, 1875.

**THIS SOUNDER RECEIVED THE FIRST PREMIUM OVER ALL COMPETITORS  
AT THE CENTENNIAL EXHIBITION.**

The New Giant Sounder possesses many advantages in its tone, sound, working adjustment and general beauty over the old one, and it is unapproachably superior to all others of any manufacture whatever. It has been adopted wherever it has received a single trial, and heads the list of Morse Sounders.

EVERY INSTRUMENT WARRANTED PERFECT, and satisfaction guaranteed.

Telegraphers will note particularly that we use the double set-screw front adjustment on all of our Giant Sounders.

## PRICES.

Giant Sounder, Local.....	\$3 50
" " 20 ohms resistance.....	4 00
" " 20 to 50 ohms resistance.....	4 50

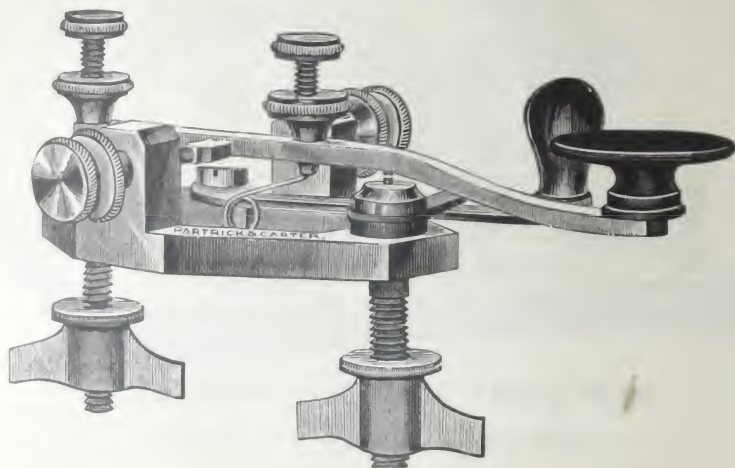
## THE GIANT SOUNDER AND STEEL LEVER KEY,

**SHORT LINE COMBINATION SET.**

This combination set is composed of 20 ohm Giant Sounder and our Steel Lever Key, mounted on a polished mahogany base.

Price .....	\$6 50
Same set with Local Magnets .....	6 00

# PARTRICK & CARTER'S ACME STEEL LEVER KEY.



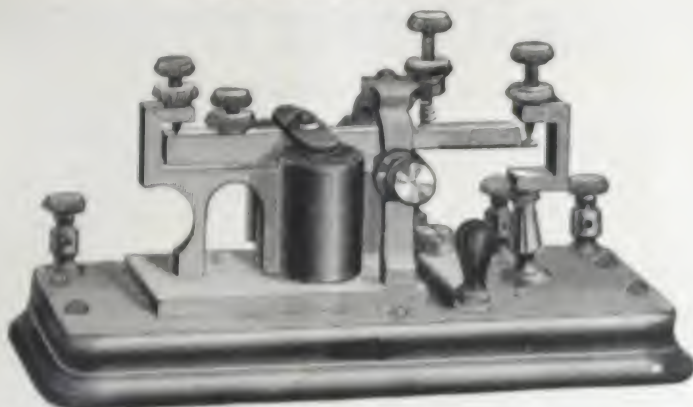
FOR BEAUTY OF DESIGN,  
LIGHTNESS, EASY-WORKING, DURABILITY,  
AND FAST SENDING,

Surpasses all other Keys ever made. This Key has received the endorsement of hundreds of the best operators throughout the country as being the PERFECTION OF KEYS, and each day brings new evidence that the ACME is the most popular Key ever introduced to the telegraphic profession.

## PRICES.

ACME STEEL LEVER KEY, with Legs, same as cut.....	\$2 50
" " " " Legless Pattern, Top Connection.....	2 75
All-Brass Key, with Legs, Fine Finish.....	3 00

 Sent by registered mail, carefully boxed, upon receipt of price.

**REPEATING SOUNDER.**

The above cut represents the best modern form of Repeating Sounder, with spring points.

Price ..... \$7 50  
 Repeating Sounders, Giant Pattern, with plain points..... 6 50



**PARTRICK & CARTER'S**  
**ORIGINAL LITTLE GIANT POCKET RELAY.**

PRICE IN CASE, \$14.00.

This form of Pocket Relay possesses many advantages over the old one, as in this all the parts are nearly full-sized, and so arranged as to be easy of adjustment, and the whole so compactly put together as to occupy a space very little larger than the old style. The tone is loud and clear, being almost equal to a **SOUNDER**. Put up in splendid morocco case five inches long by three inches wide, so as to be easily carried in the pocket.

**SIGNAL SERVICE POCKET RELAY.**

This is a very neat form of Pocket Relay. Put up in morocco case, substantial in every way, clear tone and easy of adjustment. All parts nickel-plated. This pattern has been in use by the Signal Service Department of the United States for some years, and gives perfect satisfaction.

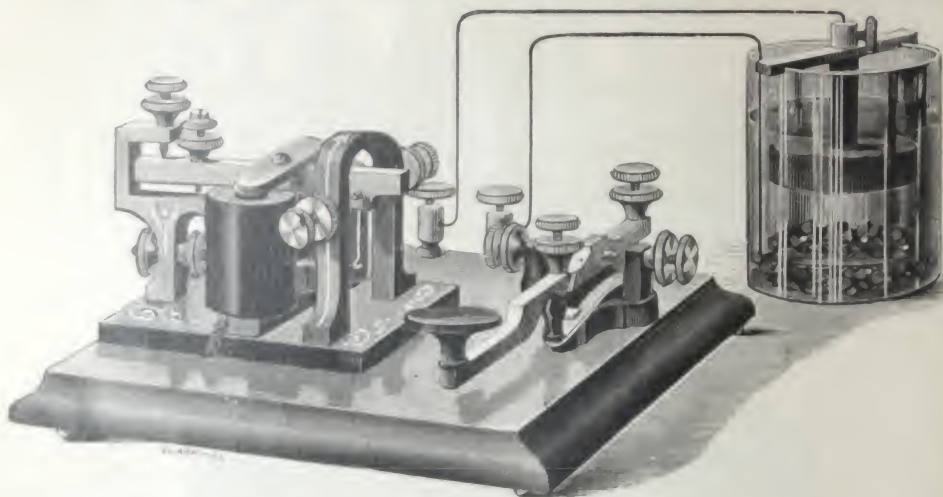
PRICE, \$6.00.



# PARTRICK & CARTER'S PREMIUM LEARNERS' APPARATUS,

OR SHORT LINE INSTRUMENT.

Not the Cheapest, but Guaranteed the Best.

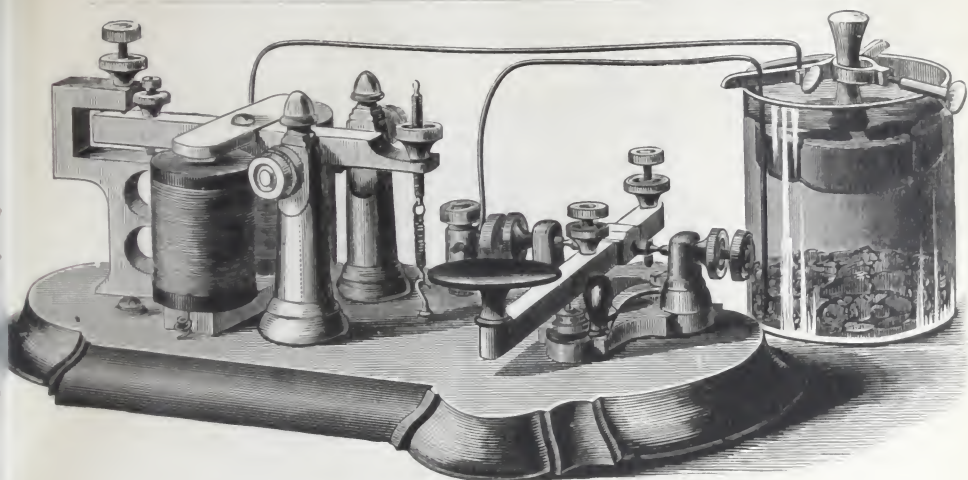


The Premium Learners' Apparatus and Outfit comprises the famous "**NEW GIANT SOUNDER, PERFECTED**," and the "**NEW CURVED KEY**," placed upon a polished walnut base, with a cell of Callaud Battery, Chemicals, Office Wire and an excellent Book of Instruction.

These Instruments are the exact style, size and form of the Instrument upon which we received the highest award at the Centennial Exhibition over all competitors. There is nothing whatsoever in miniature or half made up. Everything perfectly strong and reliable, and so guaranteed, or money refunded. Our Book of Instruction, which accompanies the Instrument, contains full and explicit instructions as to the manner of setting up the battery, running of wires, &c.

## PRICES.

Complete Outfit	\$4 00
Instrument without Battery	3 36
"    "    "    wound with finer wire for lines of 1 to 15 miles	4 00
Cell of Battery complete	65
Insulators, Porcelain, with Screws	3
No. 14 Gal. Iron Wire, per mile	6 00
Extra Zincs for Battery, each	20
"    Coppers    "    "	10
"    Hangers    "    "	7
"    Jars    "    "	25
Small Office Wire, per foot	half cent
Premium Learners' Instrument, Key and Sounder entirely nickel-plated, without Battery	4 20
Complete Nickel-plated Instrument, with Battery, &c.	5 00
Battery Jars cannot be sent by mail.	
Instruments, without Battery, sent by mail, 55 cents extra.	



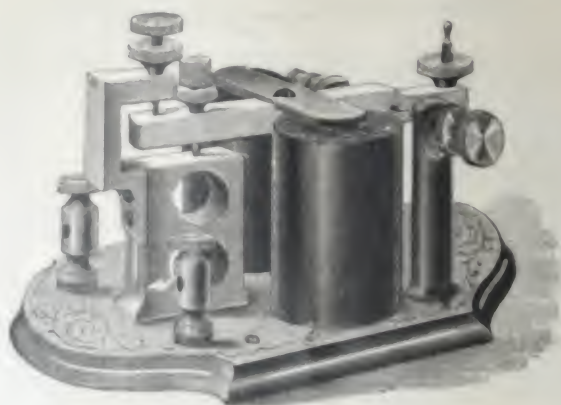
### CHAMPION LEARNERS' INSTRUMENT.

NOTE.—Learners' Instruments, as sent out with Students' Outfit, are wound with the wire which gives the best result on a *very* short line with one cell of Battery. By adding two or three cells of Battery they may be worked on *metallic circuit* of half a mile or more; but when it is desired to operate through *one* wire and ground the *fine* wire instruments should be used. The Battery required will be about as follows: For half mile to one mile, with two instruments, 4 to 6 cells; two miles, 8 cells; five to ten miles, 10 to 12 cells. For each instrument added to the line add one cell of Battery.

None genuine without the name of **PARTRICK & CARTER**, Philadelphia, on the base—so beware of imitations.

#### COMBINED SOUNDER AND KEY, BATTERY, CHEMICALS, OFFICE WIRE AND A SUPERIOR BOOK OF INSTRUCTION, WITH ALL NECESSARY DIRECTIONS FOR SETTING UP THE BATTERY AND APPARATUS, FOR \$5.00.

Price for single Instrument, good for 1 mile or less, without Battery, &c.	\$4 50
Same, Ornamental, with Rubber-covered Coils	5 50
Price of single Instrument, good for 1 to 12 miles, without Battery, &c.	5 00
Same, Ornamental, with Rubber-covered Coils	6 00
Price of Battery, per cell complete	80
“ Extra Zincs, each	25
“ “ Zinc Hangers, each	15
“ “ Coppers	15
“ “ Glass Jars	25
“ “ Office Wire, per foot	half cent
“ “ Blue Stone, per lb.	10
“ “ Book of Instruction	20



### CHAMPION SOUNDER.

THE CHAMPION SOUNDERS ARE NEAT, SUBSTANTIAL AND EFFICIENT

## CHAMPION PREMIUM SOUNDERS & KEYS.

ON SEPARATE BASES.

Premium Sounder, Japanned.	\$2 00
"    "    Nickel-plated	3 00
Champion Sounder	2 75
"    "    Rubber-covered Coils	3 25
"    Key	2 00
Premium	1 50
"    Japanned	1 50
"    Nickel-plated	1 75



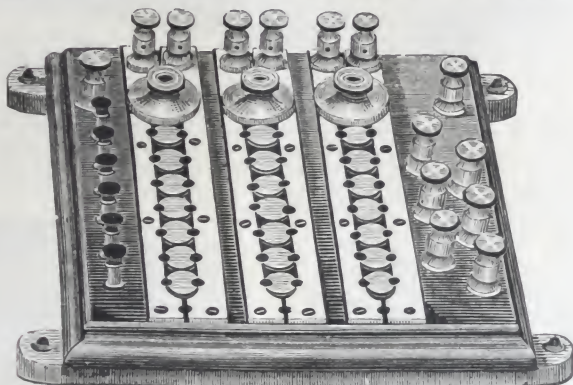
### SIGNAL KEY, WITH SPRING LEVER.

Open Circuit, or Downward Contact.	\$0 60
Closed " " Upward	60
Double " with both Up and Down Contact	80



## SWITCHES.

### W. U. PIN SWITCH, OR POOL BOARD.



The above cut represents our W. U. Pin Switch, or POOL BOARD SWITCH, as it is sometimes called. This is the most perfect and simple manner of connecting wires and loops with instruments, or changing from one line to another, of any board ever before devised. It is also very compact, occupying but very little space, and beautiful in appearance as a piece of office furniture. All connections are made with a pin or plug, which gives a rubbing, frictional contact, thus obviating the use of all springs or cords, which are so liable to oxidize or break. Switches for one, two, three, four, five and six lines constantly on hand.

### PRICES.

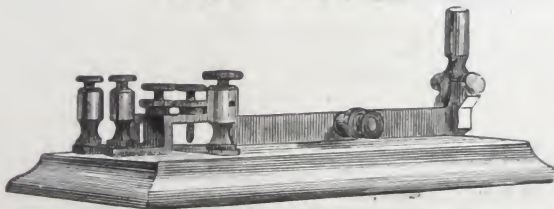
1 line, 2 perpendicular bars.....	\$3 00	7 line, 14 perpendicular bars....	\$30 00
2 " 4 " " " .....	6 00	8 " 16 " " " .....	38 00
3 " 6 " " " .....	10 00	10 " 20 " " " .....	55 00
4 " 8 " " " .....	14 00	Pegs for Switches.....each	25
5 " 10 " " " .....	18 00	Loop Pegs, for Pin Switch....	1 25
6 " 12 " " " .....	25 00		

For larger sizes, special prices furnished upon application.

Western Union Spring Jack Switches, any size, to order at short notice.

In ordering Switches for large offices, give full particulars as to number and changes of Wires, Loops, Batteries and instruments to be provided for.

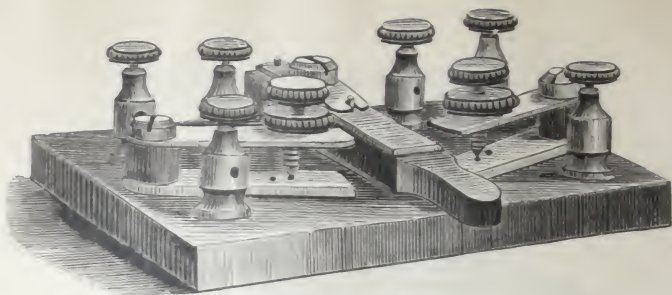
## CUT-OUTS.



### Plug Switch, Lightning Arrester and Cut-Out Combined.

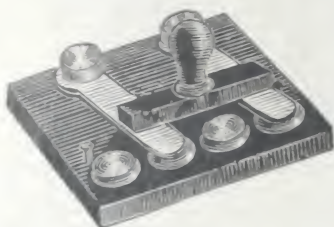
CUT-OUT.—One Line.....	\$1 50	CUT-OUT.—One Line, with Light-	
" Two Lines.....	3 00	ning Arrester, &c.....	\$2 50
		Plugs for Cut-Out.....	75

Estimates furnished upon application for Plug Switches for any number of lines. Cut-Outs for any number of lines made to order at short notice.



## QUICK SWITCH.

This is one of the most useful and perfect Switches ever devised. It is equally good as a Button Repeater Switch, as an Instrument Switch for throwing a single instrument into either one or two lines by one movement of the lever without making the slightest break in either circuit, and as a Cut-Out Switch in the place of the ordinary Plug Cut-Out. Price, \$5.50.



POLE CHANGING SWITCH.

Price, \$2.00.



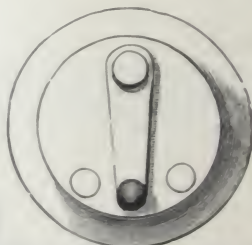
HARD RUBBER BASE SWITCH.

1	Connecting Point.....	\$0 75
2	" Points.....	80
3	" ".....	90



CHAMPION LIGHTNING ARRESTER,  
CUT-OUT AND GROUND-  
SWITCH COMBINED.

Price, \$1.00.



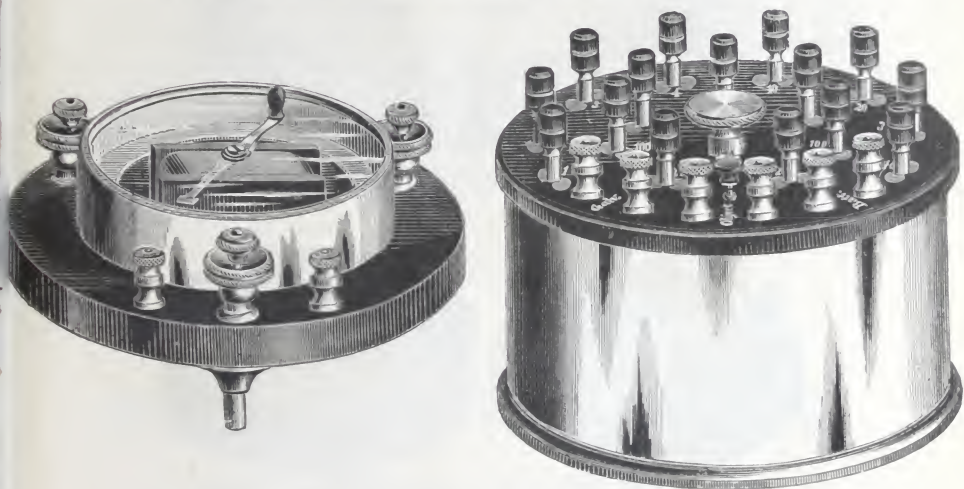
WOOD BASE SWITCH.

1	Connecting Point.....	\$0 35
2	" Points.....	45
3	" ".....	50
4	" ".....	60

SWITCHES, Repeater Button, hard rubber base.....	\$4 50
" Local Circuit Changer.....	2 50
" Telephone Top Connections, nickel-plated, hard rubber base.....	1 25
Any description of Switch, Cut-Out or Button made to order.	

## LIGHTNING ARRESTERS.

One Wire, for End Stations.....	\$2 50
Double, for Intermediate.....	3 00
Cable Arrester.....	1 25
Disk Arrester, one wire.....	1 20
Arresters of any description made to order.	

**PARTRICK & CARTER'S****OFFICE MEASUREMENT SETS.****GALVANOMETER, RHEOSTAT AND BRIDGE,****For all Measurements between 1-10 and 2000 ohms.**

The increasing use of MEASUREMENT APPARATUS, and its great practical value as applied to the numerous questions of every day's work in the telegraph office, the work-shop and the laboratory, induces us to believe that this practical, low-priced set of accurate instruments, with its plain and easily understood instructions, will meet with general favor.

As the measurement mostly required for general work consists of resistance under 2000 ohms, such as relays, electro-magnets of various instruments, batteries, coils of wire, carbons, fluids, etc., we have made the limit of capacity in this set 1-10 to 2000 ohms, and have placed its price at the lowest figure named for first-class measurement apparatus.

**Plain Instructions Accompany Each Set.**

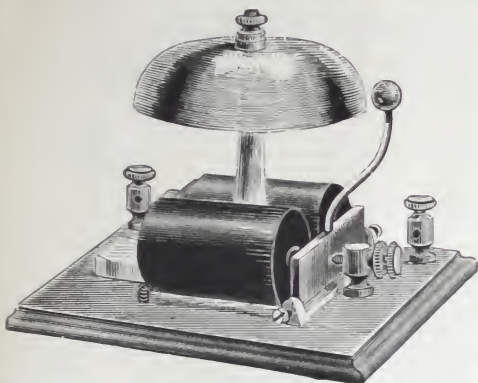
The Galvanometer is carefully constructed and highly sensitive. The Rheostat is handsomely made and the whole apparatus is furnished in a leather case for safety and convenience.

**PRICE, Complete, \$60.00.**

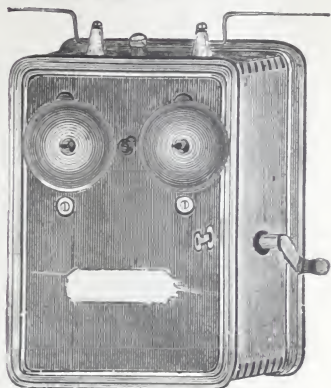




## TELEPHONE SUPPLIES.



BATTERY TELEPHONE BELL.



MAGNETO CALL BELL.

### PRICES.

Battery Telephone Bells, nickel-plated.....	\$3 00
Magneto " " " " crank, small size, \$6.00; large.....	7 50
" " " " extension.....	3 50

## DISTRICT TELEGRAPH SUPPLIES.

### NEW STYLE NICKEL-PLATED DISTRICT SIGNAL BOX.

It is to the interest of the District Messenger Service to know that, owing to particularly favorable facilities for the manufacture thereof, we are enabled to offer to the trade, in any quantity, our new, highly ornamented nickel-plated District Signal Box, embracing from one to five calls, as may be desired, at a price that invites special inquiry.

Price each, \$1 50 to \$4.00.

Special prices and all information upon application.

### PRICES.

American District Double Pen Self-starting Register.....	\$65 00
American District Signal Bell on Walnut Base.....	2 50
American District Patrol Box with Signal Box inside, for outside or pole use.....	8 00
American District Pony Relays.....	4 00
And all District Telegraph Material of best quality at lowest prices.	



**Estimates for Complete Outfits Furnished on Application.**

# BATTERIES AND MATERIALS.

## CALLAUD BATTERY.

WITH IMPROVED ADJUSTABLE ZINC-HANGER AND CONNECTION.



GRAVITY BATTERY.	Main 5x7 inches. No. 1.	Local 6x8 inches. No. 2.	Local Ex. Heavy, 6x8 inches. No. 3.
Cell, complete.....	\$0 80	\$0 90	\$1 00
Copper.....	18	18	20
Jar.....	25	30	30
Zinc.....	25	30	40
Zinc Hanger.....	16	16	20

## "Crow-Foot" Gravity Battery.



	Main 5x7 inches.	Local 6x8 inches.
Cell, complete.....	\$0 65	\$0 80
Jar.....	35	30
Zinc, with hanger and connector.....	25	35
Copper.....	18	18

## NICKEL-PLATING BATTERY.



An Improved Bunsen Cell of great power, for Nickel and Electro-plating for Striking, Electro-Motors, etc.

There are nearly 2000 of these cells in use, and they are the only Battery for nickel-plating where the absence of power prevents the use of the Dynamo-Machine.

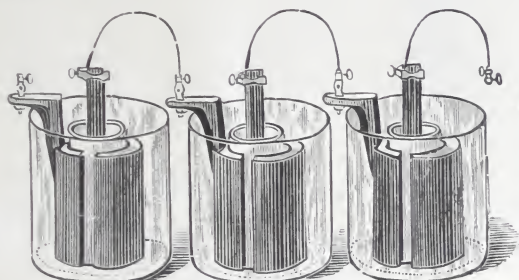
We have customers running 100 gallons of nickel solution with two of these cells. The glass jars contain six quarts, forming a very convenient tank for experimental work.

Cell, complete.....	\$5 00
Carbon.....	1 60
Carbon Clamp, platinum-faced.....	1 00
Porous Cup.....	50
Glass Jar.....	1 00
Zinc, heavy rolled.....	1 00
Zinc Connector.....	15

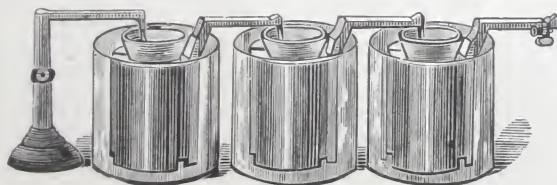


**DANIELLS' LOCAL BATTERY.**

Daniells'.—Complete, per Cell.....	\$1 50
Coppers, with Pockets.....	50
" without Pockets.....	30
Pockets, Improved Pattern.....	25
Jars, Flint Glass.....	each 35
Zincs.....	each 35
Porous Cups.....	per dozen 2 00
".....	each 20
Zinc Clamp.....	20

**CARBON, OR ELECTROPOION BATTERY.**

No. 1 Carbon.—Complete, per Cell.....	\$1 35
Carbons.....	12
" Connections, Platina Face.....	22
" Clamps.....	10
Jars, Flint.....	per dozen 2 80
".....	each 25
Porous Cups.....	per dozen 1 25
".....	each 12
Zincs, best Spelter.....	each 40
" Connections, with Nut.....	15
No. 1½ Carbon.—Complete, per Cell.....	1 70
Carbons.....	35
" Clamps.....	15
" Connections, Platina Face.....	22
Porous Cups.....	per dozen 1 25
".....	each 12
Jars, Flint.....	per dozen 2 80
".....	each 25
Zincs, best Spelter.....	each 50
" Connections, with Nut.....	15

**GROVE BATTERY.**

Grove.—Complete, per Cell.....	\$1 75	Grove.—Tumblers, Flint Glass, per	
Complete, for series.....	1 60	dozen.....	\$2 50
Platinum Strips, heavy.....	each 80	Tumblers.....	each 25
".....	per cwt 60	Zincs, best Spelter.....	each 45
Porous Cups.....	per dozen 1 25	Platina, Pole Standard.....	50
".....	each 15		

**Batteries of Every Description Made to Order.**

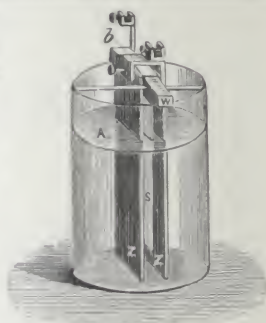
**BUNSEN BATTERY.**

BUNSEN BATTERY.	½ Pt.	1 Pt.	1 Qt.	2 Qts.	1 Gal.	2 Gals.
Cell, complete.....	\$0 90	\$1 20	\$1 50	\$2 00	\$3 00	\$5 75
Carbon .....	10	12	12	35	50	1 40
Carbon Connection....	25	40	40	45	80	1 10
Glass Jar.....	13	20	25	30	35	75
Porous Cup .....	12	13	15	20	25	75
Zinc and Connection..	30	40	60	70	1 10	1 75

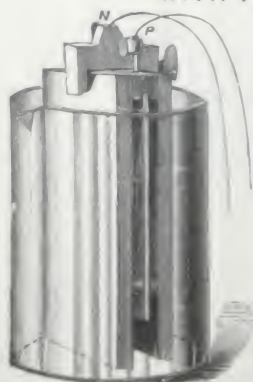
**SMEE BATTERY,**

WITH CARBON PLATE.

SIZE OF ZINCS.	No. 1. 3x5 inches.	No. 2. 3½x7½ inches.	No. 3. 4x8 inches.	No. 4. 6x10 inches.
Cell, complete .....	\$2 50	\$2 75	\$3 50	\$5 00
Carbon and Connection....	75	90	1 20	1 75
Carbon Connector .....	18	18	18	18
Carbon Insulator.....	09	09	10	10
Clamp .....	60	60	60	60
Glass Jar.....	30	30	37	75
Zincs (rolled), pair.....	50	60	95	1 60
Wood Support.....	08	08	10	10

**SMEE BATTERY,**

WITH PLATINIZED SILVER PLATES.



SIZE OF ZINC PLATES.	No. 1. 3x5 inches.	No. 2. 3½x7½ inches.	No. 3. 4x8 inches.	Kidder Patt'n 2¼x4½ inches.
Cell, complete.....	\$3 00	\$3 75	\$5 25	\$2 50
Glass Jar.....	30	30	37	45
Platinized Silver Plate....	1 50	2 00	3 00	*1 50
Connector.....	18	18	18	—
Zincs (rolled), pair .....	50	60	95	40
Zinc Clamp.....	60	60	60	40
Wood Support.....	08	08	10	—

\* WITH CONNECTOR.

**BATTERIES OF EVERY FORM AND DESCRIPTION MADE TO ORDER.**

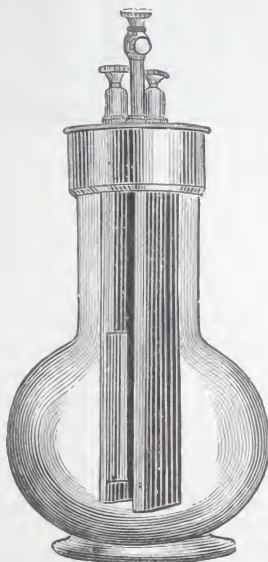
## THE GRENET BATTERY.

This Battery is especially adapted for experimental and illustrative purposes. It occupies but little space, furnishes an immense quantity of current, is beautiful in design, and, as the zinc can be raised from the fluid, may be kept charged, ready for use, for many months, and can be set in action, any time when required, by simply depressing the brass rod which slides through the centre of the cover of the cell, and to which the zinc is attached.

For operating induction coils and electro-medical instruments it is unequalled.

### DIRECTIONS.

**To Make the Solution.**—To three pints of cold water add five fluid ounces of sulphuric acid. When this becomes cold, add six ounces (or as much as the solution will dissolve) of finely pulverized bichromate of potassa. Mix well.



**To Charge the Battery.**—Pour the above solution into the glass cell until it nearly reaches the top of the spherical part, then draw up the zinc and place the elements in the cell. The fluid should not quite reach the zinc when it is drawn up.

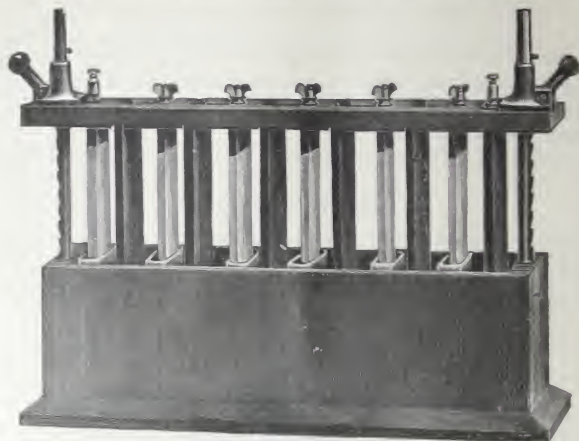
**Caution.**—As there are many cheap and inferior imitations of the celebrated Grenet Battery, which are made up with common pressed carbons, purchasers will do well to be on their guard in this particular, as the poorly made carbons of the imitation batteries, becoming soft by continual immersion in the fluid, break to pieces, and corrode and destroy the connections, rendering the whole Battery useless in a short time.

### PRICES.

			Zinc.	Carbons.	Glass.	Cell
				Each.	Jar.	Complete.
No. 1,	6 inches	high.....	\$0 20	\$0 20	\$0 35	\$2 00
" 2,	8 "	" .....	25	30	70	3 50
" 3,	10 "	" .....	25	50	80	4 50
" 4,	12 "	" .....	30	60	1 20	5 50
" 4½,	12 "	" Double Zincs and Carbons.	30	60	1 20	9 00
" 5,	14 "	" .....	35	1 00	2 00	12 00
" 5½,	14 "	" Double Zincs and Carbons.	35	1 00	2 00	15 00



## For Electric Light, Laboratory Purposes, &c.



### RUBBER CELL BUNSEN PLUNGE BATTERY.

The Elements and Porous Cups in this adaptation of the Bunsen Battery are flat instead of cylindrical, and so mounted as to give great power while occupying but little space. The cells are of hard rubber  $2\frac{3}{4} \times 3\frac{1}{4} \times 5$  inches, enclosed in a suitable wooden tray. Their arrangement permits any cell or number of cells of the whole series to be put in circuit at pleasure.

The above cut represents a series of six cells. This type of Battery is particularly well adapted for the lighting of small Incandescent Lamps and any work within its compass requiring an intense constant current.

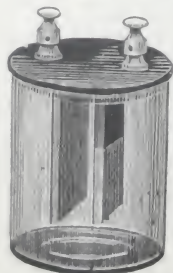
This Battery will light small Incandescent Lamps as follows:—

Two cells will light the half candle lamps; three cells will light the one candle lamps; four cells will light the two candle lamps; five cells will light the three candle lamps; six cells will light the four candle lamps.

### PRICES.


3 Cells, complete.....	\$10 00
6   "       "       ".....	15 00

### SIMPLE BICHROMATE OF POTASH BATTERY.



For operating small Medical Coils, Toy Apparatus, and for small experiments where some good cheap form of Battery is desired.

Cell, complete, $2\frac{1}{4} \times 3$ inches.....	\$0 65
Extra Zincs and Carbons, each.....	20

 Any special form or description of Battery made to order

## FULLER'S MERCURY BICHROMATE BATTERY.

### FOR OPEN CIRCUIT WORK.

This form of Carbon Battery is a most excellent one for any or all of the uses to which strong Carbon Batteries are adapted.

Having all the powerful qualities of any of the various forms of Carbon-Electropoion Batteries, its two great advantages consist in its being self-amalgamating from the supply of mercury in the porous cell, and in the great amount of sulphuric acid and bichromate (Electropoion) capable of being held in the outside jar, thus giving much longer action than can be sustained in other acid Batteries.

As this Battery is capable of remaining on open circuit for weeks at a time without much deterioration and without any attention, it is well adapted for ringing very large electric bells, electric gas-lighting or for any use where a specially powerful open circuit Battery is required, or where the Disque Leclanche Battery is not strong enough without applying too many cells. This form is also well adapted for a laboratory test Battery, and for all general experimenting.



### PRICES.

Cell, complete.....	\$0 90	Porous Cup.....	\$0 20
Carbon .....	25	Cover.....	07
Zincs .....	15	Connector.....	08
Potash .....	10	Jar.....	15
Mercury.....	10		



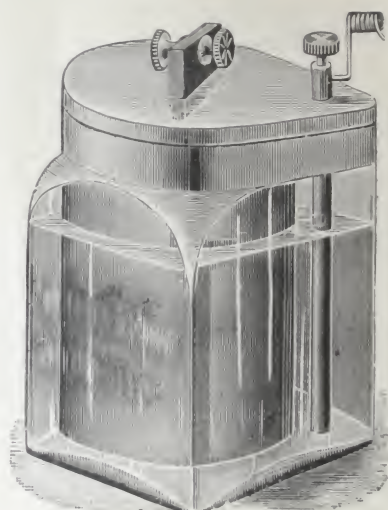
## THE "GONDA" PRISM BATTERY.

### PRICES.

Complete Cell .....	\$1 20
"Gonda" Prisms, per pair,	
with Rubber Bands....	75
Carbon, Mounted, complete	25
Glass Jar .....	18
Cover.....	09
Zinc .....	08
Salammoniac.....	08



DISQUE LECLANCHE.  
Open, Round Jar, Lead Top.



DISQUE LECLANCHE.  
Square Jar, Covered Cell, Clamp Connection

## The Leclanche Disque Battery.

ADAPTED FOR USE WITH ANNUNCIATORS, BURGLAR ALARMS, ELECTRIC BELLS, GAS LIGHTING AND ALL PURPOSES REQUIRING A RELIABLE BATTERY FOR OPEN CIRCUIT WORK.

The Disque Leclanche Battery, as now made by us, is acknowledged by those who have used thousands of cells, to be without question the most perfect, reliable and best working Battery yet placed on the market. In the manufacture of our Batteries we use only the very best selected material, and they are made by experienced hands under our personal supervision. Our long experience in the business has taught us what is required, and we take the greatest care to produce Batteries that will do the work expected from them. Among the thousands that we have made and sold we have yet to record one instance where the Partrick & Carter Disque Leclanche Battery has not given the very best of satisfaction. The late improvements added to our Battery wonderfully increases their strength and efficiency. We call special attention to our covered cell, which saves evaporation and prevents any foreign substance from getting in the solution, thus insuring a clean Battery.

## PRICES.

Cell, complete, without cover.....	\$0 80	Jar .....	\$0 15
"    "    with cover.....	85	Zinc, Amalgamated.....	08
Porous Cell.....	60	Salammoniac, per bag .....	07
Jar Top.....	08	"    per pound.....	15



# BATTERY DIRECTIONS.

IN ALL EXCEPT THE BLUE VITRIOL BATTERIES THE ZINCS SHOULD BE KEPT WELL AMALGAMATED.

**Calland, Crow-Foot and other Gravity Batteries.**—Place the copper, to which is attached the covered wire, in the bottom of the jar, spreading it out as in the cut, allowing the covered wire (which is the copper pole) to project over the top; put a pound of sulphate of copper in the bottom of jar; suspend the zinc about four inches from the bottom; fill the jar with water to one inch above the rim of the zinc, and close the circuit for a few hours on each cell.

If desirable to obtain the action of the Battery soon, put into each jar about a teaspoonful of sulphate of zinc.

**Daniells' Battery.**—Fill the jar and porous cell with water and the pocket with blue vitriol. The directions for Gravity Battery will apply to the maintenance of the Daniell's.

**Carbon Battery.**—Fill the glass jar with a solution of ten parts water to one of sulphuric acid, the porous cell with electropoion fluid. The height of the liquid in the jar and the porous cell should be about the same.

**Electropoion Fluid.**—To eight pints of water add two pints of sulphuric acid. While the mixture is still hot, stir in one pound bichromate of potash, pulverized. It is ready for use when cold. Use an earthen vessel for mixing.

Our facilities for the manufacture of electropoion fluid, or bichromate solution, are unequalled. Large quantities supplied at the shortest notice and at the very lowest market rates.

**Bunsen Battery.**—Same as Carbon.

**Grove Battery.**—Fill the porous cup with strong nitric acid and the glass jar with diluted sulphuric acid, about twenty parts of water to one of acid. When not in use the plates should be removed from the jar and the nitric acid emptied out.

**Smee Battery.**—The liquid used to charge this Battery is dilute sulphuric acid—about one part acid to ten parts water.

**Nickel-Plating Battery.**—In setting up the Nickel-Plating Battery, amalgamate the zincs thoroughly, inside and out. Into each porous cup put two ounces of nitric acid and half fill the cup with a mixture of equal parts, by measure, of water and sulphuric acid. Place the carbon in the porous cup, and add the above mixture until it reaches the proper height, as mentioned below. Put the zinc in the outer or glass jar, and fill to top of jar with a mixture of one part of sulphuric acid to twelve parts of water, previously mixed and allowed to cool. The fluids in the porous cup and outer jar should be of the same height. When the liquid in the jar becomes milky, replace it with fresh solution. Add occasionally a little nitric acid to the liquid in the porous cells, and keep the zincs well amalgamated. Nitric acid at forty degrees clear, or saturated with bichromate of potash, increases the intensity of this Battery; or, if desired, the Carbon Battery fluid may be used.

**Leclanche Battery.**—Put six ounces salammoniack into the glass jar; fill one-third full and stir. Put in porous cell. Put in zinc and connect up Battery. Keep the solution at two-thirds the height of jar, to keep the salts formed from overrunning. The Battery should be kept in a dry place, and requires very little attention, except to put in water occasionally to supply the loss by evaporation. In case of failure to work, the solution should be thrown out and fresh salammoniack and water used. If this does no good, soak out the porous cell in warm water. If it still fails, new porous cells must be used.

**Solution for Amalgamating Zincs.**—Mix one pound nitric with two pounds hydrochloric acid, and add eight ounces mercury. When the mercury is dissolved add three pounds more hydrochloric acid. To amalgamate the zinc, immerse it in this solution for one or two seconds; then remove it quickly to a dish of clean water, and rub it with a brush or cloth, when it will be found covered with a fine, even coat of mercury. This solution can be kept in a covered jar and used many times.

Another method of amalgamating zincs is to clean them by dipping in a solution of dilute sulphuric acid and rubbing on the mercury with a cloth or brush.



## TELEGRAPH LINE WIRE.

### AGENTS FOR THE WASHBURN & MOEN MANUFACTURING CO.

Nos. 9, 10, 11, 12 and 14, in half mile bundles, constantly on hand.

The following is a table of length, size, weight, strength, etc., of the superior brand of Galvanized Iron Wire, manufactured solely for us, and pronounced by all telegraph superintendents and line men to be the very best wire ever handled. Parties contemplating erecting telegraph lines will find it to their advantage to examine our wires before purchasing elsewhere.

We will furnish estimates for the wire, and guarantee to deliver any quantity at the shortest notice and lowest market rates.

### WEIGHT AND RESISTANCE OF EXTRA BEST BEST IRON GALVANIZED LINE WIRE.

No.	Diameter.	Pounds per Mile.	Ohms per Mile.	Per lb.	Breaking Strain.
4	.243	807.7	6.50	6.53	2350
6	.207	590.3	8.7	8.94	1700
8	.169	394.	13.14	13.4	1100
9	.152	319.2	16.2	16.54	900
10	.138	263.4	19.35	20.05	750
11	.124	213.	24.05	24.78	600
12	.112	175.7	28.85	30.	500
14	.86	102.9	47.82	51.31	300

### STEEL WIRE.

No.	Resistance.	Weight per Mile.
14	75.3 ohms.	95 lbs.
16	121.8 "	55 "

Iron and Steel Wires as above are measured by the "Washburn & Moen" gauge.

### HARD DRAWN COPPER WIRE.

B. & S. Gauge	Resistance.	Weight per Mile.
No. 10	5.7 ohms	170.48 lbs.
" 12	8.8 "	104.36 "
" 14	13. "	68. "
" 16	23.8 "	37. "

### Insulated Galvanized Iron Telephone and Telegraph Wire BEST DOUBLE BRAIDED AND FINISHED.

#### PRICE PER MILE.

No. 8.....	\$50 00	No. 12.....	\$40 00
" 9.....	48 00	" 14.....	38 00
" 10.....	45 00	" 16.....	35 00
" 11.....	42 00		

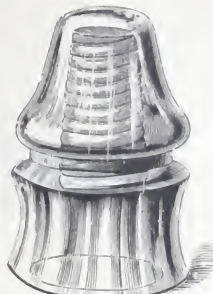
## INSULATORS, BRACKETS, PINS, &amp;c., &amp;c.



PONY.



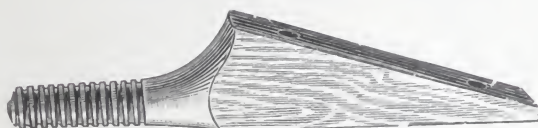
WESTERN UNION.



REGULAR.



OAK PIN.



OAK BRACKET.



RUBBER HOOK INSULATOR.

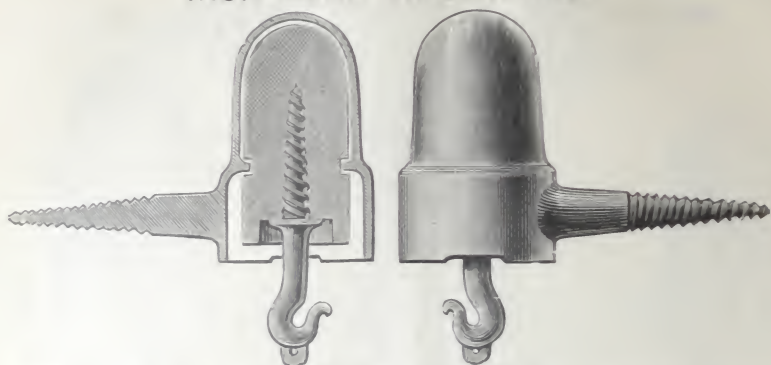
CUBAN AND OTHER PATTERNS OF INSULATORS, NOT GENERALLY USED IN THIS COUNTRY, FURNISHED TO ORDER.

## PRICES.

	EACH.
W. U. Insulators .....	\$0 06
Regular Screw Insulators.....	04½
Pony Insulators.....	03
Rubber Hook Insulators.....	14
Brooks' Screw Shank Insulators.....	38
Brooks' Lug. Insulators.....	30
Iron Hood Insulators.....	33
Oak Brackets.....	02
Oak Pins.....	02
Spikes, per pound.....	05

Special Prices given for all Building Supplies, such as Wire, Insulators, Brackets, Pins, Cross-Arms, Pole Steps, Spikes, &c.



**IRON HOOD INSULATORS.**

We would call special attention to our **NEW IRON HOOD INSULATORS**, manufactured expressly for Central and South America, as also for all climates subject to a high temperature. The above cut represents the Insulator in its perfect form, and also a longitudinal section, showing the form of its construction.

We claim that these Insulators are superior to all others, for the following reasons:—

1. They are indestructible, being made entirely of iron and wood, and will not break with bad treatment while transporting them, or in the construction of lines.
2. They last even longer than the wire originally suspended upon them.
3. They will not break or crack like those of glass when exposed to rain and afterwards to the hot sun.
4. They cannot be broken by stones or other missiles that may be thrown at them.
5. They are a more perfect Insulator than those of glass, as the wood cannot get wet, it being protected by the iron hood, and consequently the line is not exposed to the loss of the electric current, which maintains itself uniform in all conditions of the atmosphere.
6. They can be put on as easily as the wooden brackets and glass Insulators.
7. Each Insulator is galvanized, and consequently will not rust.
8. They cannot be broken or destroyed by lightning.
9. They are as perfect in any weather as those of glass when dry, as the wood is thoroughly dried in ovens, and afterwards well saturated with a perfectly insulating substance before being placed within the hood.
10. The wood cannot fall out, as it is kept in place by means of two iron ears (see cut), besides being solidly embedded in an insulating cement. These Insulators have been very extensively used in Central and South America: and we can furnish testimonials from those countries respecting their insulating qualities, beauty of form and general utility.

**PRICE, 33 CENTS EACH.**

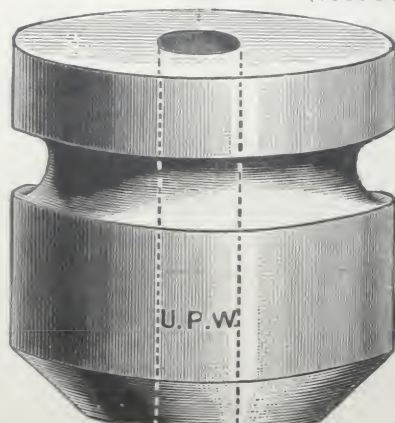
**PARTRICK & CARTER,**

Sole Proprietors and Manufacturers.

**PORCELAIN INSULATORS.**

For Short Lengths, Light Lines and Electric Light Work.

(CUTS FULL SIZE).



**No. 3, HEAVY.**

Price, each, with Screw.....\$0 05  
 " " without Screw..... 03



**No. 4, ORDINARY.**

Price, each, with Screw.....\$0 03  
 " " without Screw... 02

# PORCELAIN KNOBS AND BRACKETS



No. 5.

No. 5, with Screws, each.....	\$0 02
" 5, without Screws, each.....	01 1/2
" 6, with Screws, per doz.....	30
" 6, " " " 100.....	95
" 6, without Screws, per doz.....	12

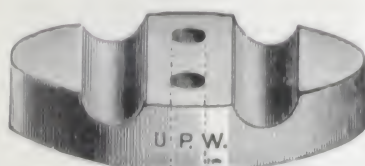


No. 6.

No. 6, without Screws, per 100.....	\$0 80
" 7, with Screws, per doz.....	20
" 7, " " " 100.....	95
" 7, without Screws, per doz.....	12
" 7, " " " 100.....	50



No. 7.



No. 22.

No. 22, with Screws, per doz.....	\$0 50
" 22, " " " 100.....	2 00
" 22, without Screws, per doz.....	30
" 22, " " " 100.....	1 50
Single Bracket, with Screws, per doz.....	40
" " " 100.....	1 75
" " without Screws, per doz.....	30
" " " 100.....	1 25



SINGLE BRACKET.



No. 13.



No. 11.



No. 23.

No. 13, with Screws, per doz.....	\$0 30
" 13, " " " 100.....	1 35
" 13, without Screws, per doz.....	18
" 13, " " " 100.....	80
" 11, with Screws, per doz.....	30
" 11, " " " 100.....	1 35
" 11, without Screws, per doz.....	18
" 11, " " " 100.....	75
" 23, with Screws, per doz.....	55
" 23, " " " 100.....	2 90
" 23, without Screws, per doz.....	35
" 23, " " " 100.....	1 40
" 36, with Screws, each.....	04
" 36, without Screws, each.....	03

Special prices upon application for large quantities.



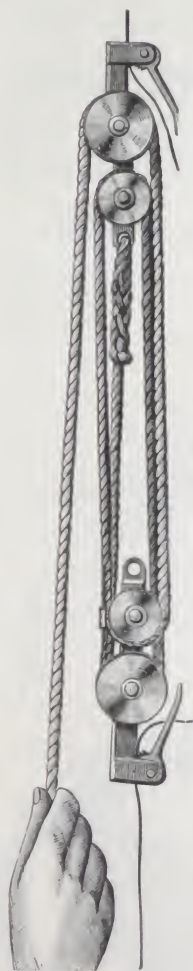
No. 35.





# CLARK'S PATENT PULLEY BLOCKS.

THE VERY LATEST DEVICE FOR PUTTING UP ALL KINDS OF WIRE, TELEGRAPH WIRE, TELEPHONE WIRE, ELECTRIC LIGHT WIRE, BARBED WIRE, BARE WIRE OR INSULATED WIRE.



The Blocks will not injure the wire or weaken it, nor will it injure or strip the insulation. It combines all the virtues of the old style pulley block and come-a-long and none of its disadvantages. The weight, including rope, is only three pounds, and the purchase is so great that an ordinary telegraph or telephone wire can be pulled asunder by one man. No time lost with long rope, as the pulleys being open, the need of long rope is obviated, and, therefore, fifteen to twenty feet of rope is ample for any purpose. You can at pleasure throw the rope over enough pulleys for a heavy pull, as in Cut 1, or for a light pull, as shown in Cut 2, without loss of time for adjustment, so common and tedious with the old style pulley blocks. As the pull requires, you can use 1, 2, 3, 4 or 5 pulleys, doubling your strength every time you add a pulley.

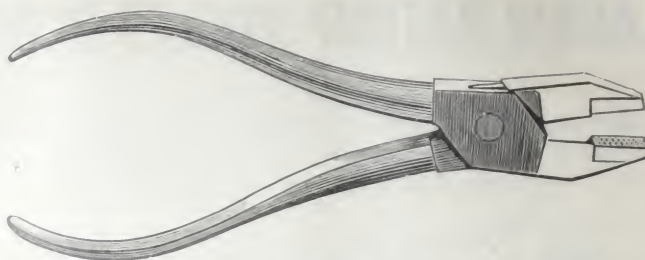
The Pulley Block will hold the wire when tight; the coupling is made by fastening unused end of rope to pulley block so the line-man can use both hands to make his coupling. The direction of the pull can be changed at will by throwing the rope on or off a pulley, a great advantage to a man on a pole. This is the only tool with which a line-man can, unaided, tighten up a line or take the sag out of a line on top of a pole. The weight is so small that it is no burden for a line-man to carry.



## PRICES.

Telegraph or Telephone size (will grip Bare Wire, No. 8 to No. 16).....\$5 00  
Electric Light size (will grip Insulated Wire, No. 0 to No. 10)..... 6 00

**PARTRICK & CARTER, Agents.**

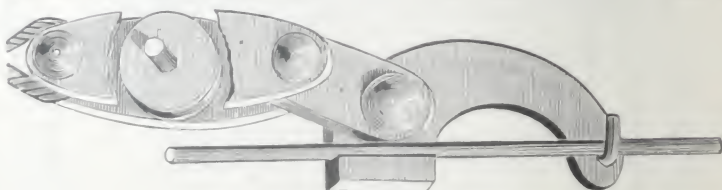


### STUBS' BEST QUALITY SIDE-CUTTING PLIERS.

Pliers, Stubs', 5 inch, each.....	\$1 00	Pliers, Stubs', 7 inch, per doz....	\$18 00
" " 5 " per doz.....	10 00	" " 8 " each.....	2 25
" " 6 " each.....	1 25	" " 8 " per doz.....	24 00
" " 6 " per doz.....	11 00	" Plain, 6 to 8 in., per doz. 7 to 12 in.	00
" " 7 " each.....	1 75		

### IMITATION STUBS' SIDE-CUTTING PLIERS.

5 inch, per doz.....	\$7 00
6 " ".....	8 00
7 " ".....	10 00
8 " ".....	12 00
Fry's Patent Splicing Pliers, per pair.....	2 25



### WIRE STRETCHERS.

Buckley's Wire Stretchers, single.....	\$1 85
" " " double.....	2 50

### TREE TRIMMERS.

Tree Trimmers, Heavy.....	2 50
---------------------------	------

(Patented May 17, 1881—Aug. 13, 1881).

### Patent "Come-Along" Stretcher

FOR STRETCHING TELEGRAPH AND  
TELEPHONE WIRE.

This is the most effective and simple Wire  
Stretcher ever introduced.

Price, each.....	\$1 50
" with Strap, each.....	2 50



Every description of Files, Screw-Drivers, Saws and Gimblets, for running Burglar Alarm, Annunciator and Office Wires, as well as Tools of all kinds used in the construction or repairing of Telegraph Lines.

## SOLDERING APPARATUS.

Portable Charcoal Fire Pot.	\$2 50
Portable Charcoal Fire Pot, with Solder Pot.....	3 00
Alcohol Furnace.....	4 50
Alcohol Torches.....	.75c. to 2 00
Blow Pipes.....	40c. to 75
Soldering Coppers, per pair	
	\$1.50 to 3 00
Solder Pot.....	70
“ Ladle.....	35
“ (fine), per lb.....	20



Gutta-Percha Bottles for Fluid, 4 oz.....	\$0 60
“ “ “ 8 “.....	75
“ “ “ 16 “.....	90

## COLD CHISELS.

Sizes,	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1 inch.
Price,	\$0.20	.20	.25	.30	.40	.50	.60 each

## MONKEY-WRENCHES.

10 inch, each.....	\$0 60	15 inch.....	\$1 24
12 “ “.....	70		

## BRACES.

8 inch Sweep, each.....	\$0 75	10 $\frac{1}{2}$ inches Sweep, each.....	\$1 00
9 $\frac{1}{2}$ “ “.....	90		

## BITS.

$\frac{1}{4}$ inch.....	\$0 25	$\frac{3}{4}$ inch.....	\$0 45
$\frac{3}{8}$ “.....	30	$\frac{1}{2}$ “.....	50
$\frac{1}{2}$ “.....	35	1 “.....	70
$\frac{5}{8}$ “.....	40		

## SOCKET-FRAMING CHISELS for Cutting “Gains.”

Sizes,	$\frac{1}{2}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$	2 inches
Prices..	\$0.50	.65	.75	.80	.90	\$1.00 each

## HATCHETS.

No. 2, each.....	\$0 60	No. 4, broad, each.....	\$1 00
“ 3, “.....	75	“ 5, “.....	1 10

## AXES.

Axes, with Handles.....	\$1 25
-------------------------	--------



## HOLLOW HANDLE AND TOOL HOLDER.

With 10 Cast Steel Tools. Price, \$1.00. Will hold anything, from cambric needle to 8 inch file.

Every description of Files, Screw-Drivers, Saws and Gimblets, for running Burglar Alarm and Office Wires, as well as Tools of all kinds used in the construction or repairing of Telegraph Lines.





STEEL BARS.



SPOON.



SHOVEL.



CANT HOOK.

## PRICES.

Tapping Bars, cast steel, per lb.	\$0 13
Tamping Bars, per lb.	11
Shovels, 5 foot handles, per doz.	10 00
Spoons, " " " "	9 00
Cant Hooks, 5 foot handles, each	2 00
Deadman, with 10 foot poles and heavy pole	2 50
Poles, plain, for pole poles, each	15
Poles, with guards	1 00
Pole, plate, with pole	2 00
Pole, with guard and pole	2 50



Wire Wire Racks, on Barrow \$10 00  
" " " " for Wagon 9 00



## LINE TAPPING CLAMPS.

Improved Pattern. Price, \$4.00.

We give above a cut of the latest and most approved Line Tapping Clamp in use. The opening through the centre allows free use of the pilots for cutting the line, and the form of the Clamp brings the strain of the line being upon the two uprights, had a tendency to strain and break the Clamp. This Clamp is intended for the convenience of the operator in connecting in an instrument at wrecks, or for testing purposes, being provided with a switch to connect the wire through, and so allow it to remain until removed by repair men, and the line spliced.

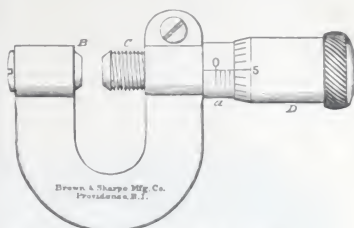
Our Tools of every description made and furnished to order. Special prices upon application.



AMERICAN STANDARD WIRE GAUGE.

Price 0 to 36.....\$4 00 Price .....\$5 00  
 " 5 to 36..... 3 00 " in Morocco Case ..... 5 50

Telephone Inspector's Pocket Oil-Can. Price, 25 Cents.



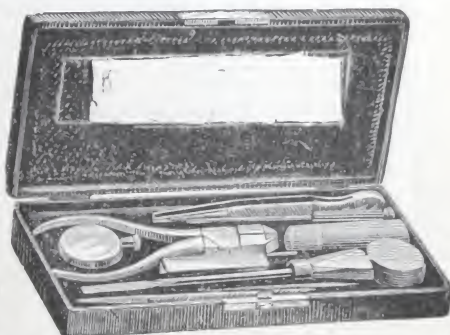
POCKET GAUGE.

Measures Wire or Sheet Material from  $\frac{1}{100}$  to  $\frac{3}{10}$  diameter or thickness.

## INSPECTOR'S SET OF SMALL TOOLS

Complete Set in Fine Morocco Case, containing everything necessary for adjusting Telegraph Instruments Stock Printing Instruments and Telephone Apparatus. The Tools are of the finest quality, and are nickel-plated.

Complete Set, in case....\$5 50  
 Morocco Case, alone..... 1 50



### TAPE LINES.

#### PATENT LEATHER CASES.

Feet,	25	30	40	50	60	66	75	80	100
Price,	\$0.45	.50	.60	.70	.75	.80	.90	.95	\$1.10

#### BEND, OR ENGLISH SOLE LEATHER CASE.

Feet,	25	33	40	50	66	75	100
Price,	\$1.75	2.00	2.25	2.50	3.00	3.50	4.00

These Tapes have a wire warp.

### LONG GIMBLETS.

#### FOR INSIDE WIRE WORK.

12-inch long, 50 cents.....24-inch, 80 cents..... 36-inch, \$1.00

# OFFICE FIXTURES AND MATERIALS.

## OFFICE WIRE BRACKETS.

2 Holes, each.....	\$0 10	10 Holes, each.....	\$0 35
3 " ".....	12	12 " ".....	40
4 " ".....	14	14 " ".....	45
5 " ".....	16	16 " ".....	50
6 " ".....	22	18 " ".....	55
8 " ".....	30	20 " ".....	60



**OFFICE WIRE CLEATS.**

For 2 to 20 wires..... $\frac{1}{2}$  cent per wire.

Special shapes or sizes to order.

Special prices for quantities.



**MESSAGE HOOKS.**



**WINDOW TUBES.**

Hard Rubber, with $2\frac{1}{2}$ in. heads.	\$0 07	Hard Rubber, 24 inches long.	\$0 40
" " " 3 " ".....	8	" " " 18 " ".....	30
" " " 4 " ".....	10	" " " 12 " ".....	20
" " " 6 " ".....	15	Window Tubing, per foot.....	20

Window Tube Binding Posts, for attaching line to office wire.....	16
Screw Plate, for cutting thread on line wire.....	1 50



**OFFICE WIRE STAPLES.**

**STEEL.**

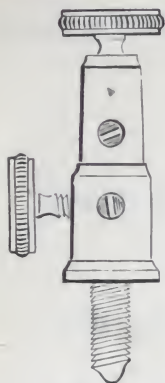
Double Pointed Tacks, large, per box.....	\$0 12
" " " small, ".....	10
Office Wire Staples, large or small, per pound....	25
Message Hooks, per dozen.....	75
" " nickel-plated, per dozen.....	90

## STATIONERY.

Black Sheets, for Manifold, each.....	\$ 10
" " " per dozen.....	75
Board Clips—No. 1, per dozen.....	6 50
" " " 2, ".....	5 50
Brass Clips, per dozen.....	2 00
Enamelled Sheets, for Manifold Books.....	50
Envelopes to order.....	
Manifold Paper, per book, white.....	35
" " " yellow.....	40
Message Paper, per pound, best.....	20
" " " common.....	18
In large quantities, special prices.....	
Stylus—Agate, best quality.....	90
" " Steel.....	50
Stationery of every description to order.....	



# BINDING POSTS, CONNECTORS, &c.



Double  
Wood Screw  
No. 1.



Large  
Wood Screw  
No. 2.



Medium  
Wood Screw  
No. 3.



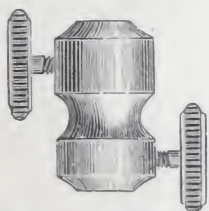
Small or  
Telephone  
Wood Screw  
No. 4.



Regular  
Instrument  
No. 5.



Small  
Instrument  
No. 6.



DOUBLE CONNECTOR,  
No. 7.



ELECTRIC LIGHT CONNECTOR.  
In ordering give size of wire for  
which they are wanted.  
No. 8.



SINGLE  
CONNECTOR,  
No. 9.

No. 1, Double Wood Screw Binding Posts.....	Price each, \$ 18
" 2, Large Single Wood Screw Binding Posts.....	" 15
" 3, Medium Single Wood Screw Binding Posts.....	" 12
" 4, Small or Telephone Wood Screw Binding Posts.....	" 10
" 5, Regular Size Instrument Binding Posts.....	" 12
" 6, Small Size Instrument Binding Posts.....	" 10
" 7, Double Connector.....	" 10
" 8, Electric Light Connector.....	" 10
" 9, Single Connector.....	08

Special prices for quantities.

Connectors and Binding Posts of all kinds made to order.

Trunnion Screws.....	\$ 12
" " Check Nuts.....	10
Key Lever Knobs.....	20
" " " with Dowels.....	25
Circuit Closer Knobs.....	08
" " " with Dowels.....	10
Top Screws for Binding Posts.....	08
Message Hooks, per doz.....	75
" " " nickel-plated, per doz.....	90
Adjustment Screws.....	10
" " " Check Nuts.....	10

# INSULATED WIRES.

NOTE—ALL INSULATED WIRES ARE SOLD BY AMERICAN GAUGE, UNLESS OTHERWISE MENTIONED.

## Office Wire.

WOUND AND BRAIDED, PARAFFINED, COMPRESSED AND POLISHED.

No. 12, 25 feet, per pound	\$0.40	No. 10, 50 feet, per pound	\$0.40
" 14, 50 " " "	40	" 12, 100 " " "	40

## Burglar Alarm, Call-Bell and Annunciator Wire.

DOUBLE COTTON WRAPPED, WAXED AND PARAFFINED.

ALL COLORS.

No. 18, 250 feet, per pound	\$0.30	No. 20, 250 feet, per pound	\$0.30
" 22, 500 " " "	40		

## Office Cables.

From 14 to 100 conductors made of any size to 50 TO 10 B. & S. gauge. Insulated with cotton, compactly twisted together, and braided to give extra protection of cotton, and finished with patent composition.

Twisted Braided, per pound	\$0.40
Twisted Braided, " "	50

## Triple Colored Gas Fixture Wire.

FOR LIGHTING GAS BY ELECTRICITY—WHITE, YELLOW OR BROWN.

No. 20, 25 feet, per pound	\$1.00
" 22, " " "	1.00
" 24, " " "	1.00

## Copper Wire, Lead-Encased.

THOROUGHLY INSULATED. No. 14 AND FINEER.

QUANTITY OF WIRE.

Wires, 1	2	3	4	5	6	7	8	10	12
Feet, No. 14	10	20	30	40	50	60	70	80	100 feet.

## Splicing Tapes.

Splicing, per 100	\$0.50	Wires, 100 feet, per 100	\$0.50
		14" diameter across on large end	

# TABLE SHOWING DIFFERENCE BETWEEN WIRE GAUGES.

BROWN & SHARPE'S.	STUBS'.	OLD ENGLISH.	BROWN & SHARPE'S.	STUBS'.	OLD ENGLISH.
12	14 $\frac{1}{4}$	14 $\frac{1}{4}$	26	27	28 $\frac{1}{2}$
13	15	15	27	28	29 $\frac{3}{4}$
14	16	16	28	29 $\frac{1}{2}$	31
15	17	17	29	30 $\frac{1}{2}$	32
16	17 $\frac{3}{4}$	17 $\frac{3}{4}$	30	31	33 $\frac{1}{4}$
17	18 $\frac{1}{2}$	18 $\frac{1}{2}$	31	32	35
18	19 $\frac{1}{4}$	19	32	33	35 $\frac{3}{4}$
19	20	20	33	34	36 $\frac{1}{2}$
20	21	21	34	34 $\frac{1}{4}$	37 $\frac{1}{4}$
21	22	22 $\frac{1}{2}$	35	34 $\frac{3}{4}$	38 $\frac{1}{4}$
22	23	24	36	35	39
23	23 $\frac{3}{4}$	25 $\frac{1}{4}$	37	35 $\frac{1}{2}$	40
24	25	26	38	36	
25	26	27 $\frac{1}{2}$			

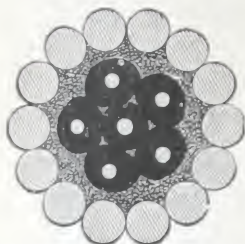
## RESISTANCE AND WEIGHT TABLE.

The resistances are calculated for pure copper wire. Our wire averages about 98 per cent. of the conductivity of pure copper. The number of feet to the pound is only approximate for insulated wire.

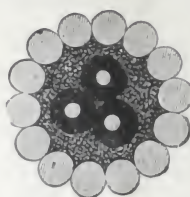
Number.	Diameter.	FEET PER POUND.			RESISTANCE NAKED COPPER.
		Cotton Covered.	Silk Covered.	Naked.	Ohms per Pound.
8	.12349	....	....	20	.0125
9	.11443	....	....	25	.0197
10	.10189	....	....	32	.0270
11	.09074	....	....	40	.0501
12	.08081	42	46	50	.079
13	.07196	55	60	64	.127
14	.06408	68	75	80	.200
15	.05707	87	95	101	.320
16	.05082	110	120	128	.512
17	.04525	140	150	161	.811
18	.0403	175	190	203	1.29
19	.03539	220	240	256	2.11
20	.03196	280	305	324	3.27
21	.02846	360	390	408	5.20
22	.02535	450	490	514	8.35
23	.02257	560	615	649	13.3
24	.0201	715	775	818	20.9
25	.0179	910	990	1030	33.2
26	.01594	1165	1265	1300	52.9
27	.01419	1445	1570	1640	84.2
28	.01264	1810	1970	2070	134.
29	.01126	2280	2480	2617	213.
30	.01002	2805	3050	3287	338.
31	.00893	3605	3920	4144	539.
32	.00795	4535	4930	5227	856.
33	.00708	....	6200	6590	1357.
34	.0063	....	7830	8330	2166.
35	.00561	....	9830	10460	3521.
36	.005	....	12420	13210	5469.



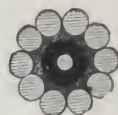
# SUBMARINE CABLES.



6.—CONDUCTOR CABLE.



3.—CONDUCTOR CABLE.



1.—CONDUCTOR CABLE.

Having obtained the agency for the sale of Telegraph Cables, we are now prepared to furnish our patrons with the very best Kerite and Gutta Percha Cables manufactured, and at the lowest prices.

All our cables are thoroughly tested and warranted perfect in every respect. As well as deep sea and river Cables, we can furnish Cables for air or underground.

## Light Weight Lead Cables for Inside Wiring.

No. 18, per foot per Conductor.....	\$0 04
“ 20, “ “ “ .....	03¾
“ 22, “ “ “ .....	03½

## WARING BUNCHED CABLES.



	No. 14, B. & S. Gauge, Copper.	No. 16, B. & S. Gauge, Copper.	No. 18, B. & S. Gauge, Copper.	No. 20, B. & S. Gauge, Copper.	No. 22, B. & S. Gauge, Copper.
25, 30, 40 and 50 Conductors, per foot of Conductor.....	Cts. 4.6	Cts. 3.6	Cts. 2.5	Cts. 2	Cts. 1.6
20 Conductors, per foot of Conductor .....	4.7	3.7	2.7	2.1	1.7
15 Conductors, per foot of Conductor .....	5	4	3	2.3	1.8
8 and 10 Conductors, per foot of Conductor .....	5.2	4.2	3.2	2.5	2

Special rates and all information will be given upon large orders.

# GUTTA-PERCHA AND MARKS' COMPOUND

## INSULATED

### PURE COPPER ELECTRIC WIRE

FOR OFFICE, SUBMARINE, SUBTERRANEAN, AERIAL AND BATTERY USES,  
AND FOR ANY ELECTRICAL PURPOSE REQUIRING A PER-  
FECT, RELIABLE AND DURABLE INSULATION.

Regular sizes constantly in stock. All sizes are by the Brown & Sharp  
American Gauge.

SIZE OF WIRE AND INSULATION.	NUMBER FEET TO POUND.	PRICE PER POUND.
4 x 1	8	\$0 90
6 x 2	11	1 00
8 x 3	16	1 10
10 x 4	21	1 20
12 x 6	36	1 30
14 x 7	53	1 40
16 x 8	75	1 55
18 x 9	126	1 70
20 x 11	176	1 90
22 x 12	230	2 10
24 x 13	330	2 30
26 x 14	480	2 55
28 x 15	586	2 90
30 x 16	950	3 65
31 x 17	1240	4 10

The above INSULATED WIRES may be protected from mechanical injury\* by a covering of braided linen or tape, prepared with any desired compound; then stranded into a cable of any number of insulated conductors, covered with a banding, tape, or braid saturated with a coating of any specified composition or insulating material.

Please state, when ordering, whether intended for use as OFFICE WIRES, SUBTERRANEAN LINES, or AERIAL CABLES.

Special prices furnished upon application.

# MAGNET WIRES.

## AMERICAN GAUGE.

ON REELS, TO No. 16, OF ABOUT 150 LBS., OR IN COILS OF ABOUT  
40 LBS. B. & S. GAUGE.

	Single.	Double.	Triple.	Quadruple Wound.
Nos. 10 to 15, per pound.....	\$0 35	0 37	0 45	0 50
Nos. 16 to 20, ".....	40	44	55	60

## Magnet Wire, Smaller Than No. 20.

### COTTON WOUND, WHITE, B. & S. GAUGE.

Numbers.....	21	22	23	24	25	26	27	28	29	30	31
Single Wound, per pound.....	\$0 70	.76	.83	.90	1.00	1.10	1.25	1.35	1.50	1.65	1.80
Double " ".....	.88	.95	1.05	1.14	1.27	1.38	1.57	1.69	1.89	2.07	2.23
Numbers.....	32	33	34	35	36	37	38	39	40		
Single Wound, per pound.....	\$1.95	2.40	2.85	3.25	4.37	6.75	9.00	11.00	13.00		
Double " ".....	2.28	2.85	3.42	3.88	4.93	7.25	9.50	12.00	15.00		

### SILK WOUND.

Numbers.....	16	17	18	19	20	21	22	23	24
Single Wound, per pound.....	\$1.12	1.12	1.15	1.15	1.18	1.20	1.30	1.42	1.56
Double " ".....	1.53	1.55	1.57	1.57	1.61	1.63	1.76	1.95	2.13
Numbers.....	25	26	27	28	29	30	31		
Single Wound, per pound.....	\$1.81	2.10	2.25	2.38	2.75	2.95	3.35		
Double " ".....	2.48	2.88	3.07	3.23	3.76	4.02	4.46		
Numbers.....	32	33	34	35	36	37	38	39	40
Single Wound, per pound.....	\$3.45	3.90	4.10	3.85	7.00	11.00	13.00	15.00	20.00
Double " ".....	4.55	5.10	5.30	7.78	8.88	13.63	14.50	18.00	23.00

The above prices are for quantities of one pound and upward. We will sell the few sizes, above No. 36, by the ounce, at 20 per cent. and by quarter and half pounds at 10 per cent. advance on pound prices.

No. 36, silk-wound, on Spools.....	1 oz. \$0 75	2 oz. \$1 50
" 38, " " ".....	1 00	2 00

## German-Silver Resistance Wire.

We furnish German Silver Resistance Wire of all sizes of cotton or silk insulation to order. We carry in stock the following sizes insulated with silk:—

Sizes.....	30	32	36	38	52	56
Price per pound.....	\$2.00	2.50	3.25	3.75	5.25	12.00
Price per ounce.....	.55	.55	.40	.50	.60	1.00

## Platinum Wire.

No. 12, per inch.....	\$0 80	No. 22, per inch.....	\$0.15
" 14, " ".....	.50	" 24, " ".....	.08
" 16, " ".....	.35	" 26, per foot.....	.60
" 18, " ".....	.25	" 12 to 22 per dwt.....	.60
" 20, " ".....	.20	" 24 to 30 " ".....	.75

N. B.—We sell Platinum Wire by Brown & Sharpe's gauge.

Our Magnet Wire covered with special sizes and quality of cotton or paraffined, or otherwise insulated to order.



**ELECTRIC LIGHT WIRE.****MAGNET WIRE. FOR FIELD AND ARMATURE.**

Single Wound, Nos. 0 to 15.....	\$0 35 per pound.
Double " " 0 to 15.....	37 "
Triple " " 0 to 15.....	45 "
Quadruple " " 0 to 15.....	50 "
Single " " 16 to 20.....	40 "
Double " " 16 to 20.....	44 "
Triple " " 16 to 20.....	55 "
Quadruple " " 16 to 20.....	60 "

**INCANDESCENT LAMP CORD.****FOR PORTABLES, BRACKETS, ETC.**

Insulated with Cotton, Rubber and Silk, two Conductors.

Equal to No. 21 B. & S. Wire, per yard.....	\$0 15
" " 19 " " " ".....	20

**ARC LAMP CORD.****DOUBLE BRAIDED, COTTON AND WORSTED, OR ALL WORSTED.**

	Single Cord	Double Cord.
20. No. 30 Wires, per yard.....	\$0 15	\$0 30
30. " 30 " ".....	20	40
20. " 33 " ".....	12	25
35. " 33 " ".....	18	38
224. " 36 " ".....	25	

**CONDUCTING CORDS.**

Cotton-covered, 1 Conductor, per yard.....	\$0 10
Worsted-covered, 1 " ".....	10
" " 2 " ".....	20
Silk-covered, 1 Conductor ".....	15
" " 2 " per yard for Pear Push-Button.....	25
" " 3 " " " " " ".....	35

**TELEPHONE CORDS.**

Worsted.....	\$0 25
Silk-covered.....	40
Medical Cords, with Tinsel Conductor, single, per foot, Worsted.....	4
" " " " " " " " Silk.....	6
" " " " " " " " double, " " Worsted.....	8
" " " " " " " " " " " " Silk.....	12

Supplied with Medical Tips, at 2½ cents per Tip.

**UNDERWRITERS' WIRE.**

00 And larger.....	30c. per lb.
0 to 12.....	35c. " "
13 to 20.....	40c. " "

Any style of Flexible Cordage to be found in the market furnished at lowest prices.

## DAY'S KERITE INSULATED WIRES.

This wire is unexcelled for pureness and conductivity. It is drawn according to the new Standard Wire Gauge, which has been officially approved by the National Telephone Exchange and National Electric Light Associations. ANY REQUIRED SIZE WILL, HOWEVER, BE FURNISHED AS ORDERED.

The insulation is measured by the outside diameter, in thirty-seconds of an inch, and is increased 1-32 of an inch to each size.

### KERITE INSULATED COPPER WIRE.

Number of New Standard Gauge.	Diameter of Insulation.	Price Per 100 Feet.	Price Per 100 Feet, Lead Encased.
22	3-32	\$1 75	\$3 00
20	5-64	1 50	2 75
20	3-32	1 75	3 00
20	4-32	2 00	3 30
18	3-32	2 00	2 25
18	4-32	2 25	3 50
18	5-32	2 25	3 75
16	4-32	2 25	3 50
16	5-32	2 70	4 50
16	6-32	3 00	5 25
16	7-32	3 40	6 15
14	6-32	3 40	5 65
14	7-32	4 05	6 80
14	8-32	5 10	8 50
14	9-32	5 62	....
12	6-32	4 50	6 75
12	7-32	5 25	8 00
12	8-32	6 00	9 00

Where Kerite wire is used underground, or in damp places, a heavy insulation should be ordered. Care should be exercised in all cases to see that the capacity of the wire, its insulation and protection from mechanical injury are ample, according to the purpose it is expected to serve.

### Taped and Braided Hard-Drawn Copper Wire.

For outside use, where it is desirable that the line wire should be protected against metallic contact with other wires.

Suitable for telegraph, telephone, district and fire-alarm service.

This wire is spirally wound with Kerite tape, well lapped, finished with two braids outside, and our patent vulcanizable oil compound.

### PRICE.

No. 16.	per mile.....	\$60 00
" 14.	" .....	90 00
" 12.	" .....	112 50

### Iron Wire Covered in the Same Manner.

No. 11.	Per mile.....	48 00
" 12.	" .....	45 00

The Kerite Wires will be braided or taped without extra charge.

# DAY'S KERITE INSULATED WIRES.

PLAIN, BRAIDED AND TAPES.



GLASSYBER LINE.—Kerite Insulation and Two Strands.



COPPER.—Braid—3.



COPPER.—Twist.



COPPER.—Plain.

## TELEGRAPH AND TELEPHONE LINE WIRE.



IRON LINE WIRE.—Kerite Insulation. Twist and Braided.

## LEAD-ENCASED KERITE WIRE.

COPPER CABLE.



3/16 Insulation.



3/16 Insulation.



7/16 Insulation.



3/16 Insulation.

Kerite Wire or Cable for any special purpose will be furnished on order. Correspondence solicited.

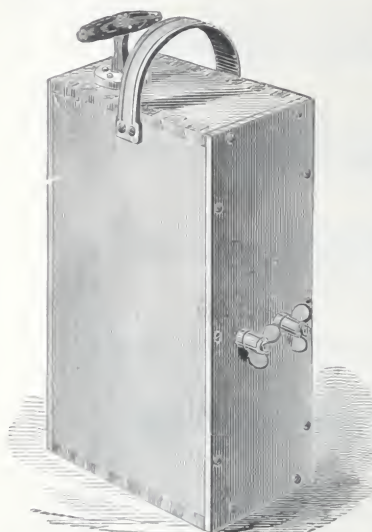
See Price List, see page 42.



# ELECTRIC APPARATUS FOR BLASTING.

## MAGNETO-BLASTING MACHINE.

The Blasting Machine which has the greatest sale at the present time is a magneto-electric instrument of small size, weighing only about 16 pounds,



occupying considerably less than one half a cubic foot of space, and sold at \$30.00 It is constructed on the Wheatstone and Siemens principle, having a magnet of the horseshoe character, of iron, wound about with coils of insulated copper wire. Between the poles of the magnet there is fitted to revolve an armature of cylindrical construction, carrying in its body other insulated wire, coiled longitudinally as to the cylinder. The rapid revolution of the armature, by suitable means, generates and sustains in the machine an accumulative current of voltaic electricity of great power, which, at the moment of its maximum intensity, is practically switched off to

the outside circuit, in which are the fuses, and in the interior of each fuse the ignition is accomplished instantly.

All the Machines are protected by patents covering some important and indispensable parts.

**PRICE, \$30.00.**

### PLATINUM FUSES.

Cotton-covered, 4 foot wires, per hundred.....	\$4 50
“ “ 6 “ “ “ “ .....	5 50
“ “ 8 “ “ “ “ .....	6 00
“ “ 10 “ “ “ “ .....	7 00

Longer Wires to order.

Leading Wire, No. 14, gutta-percha covered, per foot.....	3½
“ “ “ 14, cotton braid and compound-covered, per foot..	2
Connecting Wire, cotton-covered, per pound.....	30

Special prices for Gutta-Percha Covered Wire.

# INSULATING MATERIAL.

## SHEET RUBBER.

SHEETS. SIZE 20x48 INCHES.			RODS. IN LENGTHS, 24 INCHES.		
Thick Stubs' W. G.	Weight Full Sheet.	Per lb.	Diameter Inches.	Approximate Weight.	Per lb.
1-32	1 $\frac{1}{4}$ lb.	\$2 00	$\frac{1}{8}$	74 to 1 lb.	\$2 00
18	1 $\frac{3}{4}$ "	1 50	5-32	42 " 1 "	
1-16	2 $\frac{1}{4}$ "	1 35	3-16	30 " 1 "	
3-32	3 $\frac{1}{4}$ "		$\frac{1}{4}$	18 " 1 "	
1-8	5 $\frac{1}{2}$ "	1 50	5-16	13 " 1 "	1 60
3-16	6 $\frac{3}{4}$ "		$\frac{3}{8}$	9 " 1 "	
1-4	10 $\frac{1}{2}$ "		7-16	6 " 1 "	
5-16	13 $\frac{1}{4}$ "		$\frac{1}{2}$	5 " 1 "	2 00
3-8	15 $\frac{3}{4}$ "	1 50	9-16	4 " 1 "	
7-16	18 $\frac{3}{4}$ "		$\frac{5}{8}$	3 " 1 "	
1-2	20 "		11-16	1 " 6 oz.	
9-16	21 $\frac{1}{2}$ "	1 50	$\frac{3}{4}$	1 " 7 "	2 00
5-8	24 "		13-16	1 " 8 "	
3-4	32 "		$\frac{7}{8}$	1 " 9 "	
7-8	34 $\frac{3}{4}$ "		15-16	1 " 11 "	
1	40 "	1 50	1	1 " 13 "	2 00
1 $\frac{1}{4}$	50 "		$\frac{1}{4}$	1 " 1 lb.	
.....	.....	.....	$\frac{1}{4}$	1 " 1 $\frac{1}{4}$ "	
.....	.....	.....	$\frac{1}{2}$	1 " 1 $\frac{1}{2}$ "	
.....	.....	.....	$\frac{1}{2}$	1 " 1 $\frac{3}{4}$ "	2 00
.....	.....	.....	$\frac{1}{2}$	1 " 2 "	
.....	.....	.....	$\frac{1}{2}$	1 " 2 $\frac{1}{4}$ "	
.....	.....	.....	$\frac{1}{2}$	1 " 2 $\frac{1}{2}$ "	
.....	.....	.....	$\frac{1}{2}$	1 " 3 "	2 00
.....	.....	.....	$\frac{1}{2}$	1 " 4 "	
.....	.....	.....	$\frac{1}{2}$	1 " 5 "	
.....	.....	.....	$\frac{1}{2}$	1 " 6 "	

## HARD RUBBER TUBES IN LENGTHS OF FROM ONE TO THREE FEET.

Diameter inside.	Diameter outside.	Price per foot.	Diameter inside.	Diameter outside.	Price per foot.
$\frac{1}{2}$ inch.	$\frac{3}{4}$ inch.	\$0 04	$\frac{5}{8}$ inch.	$\frac{7}{8}$ inch.	\$0 12
$\frac{3}{8}$ "	$\frac{1}{2}$ "	08	$\frac{1}{2}$ "	$\frac{3}{4}$ "	14
$\frac{1}{4}$ "	$\frac{3}{8}$ "	10	$\frac{1}{4}$ "	$\frac{1}{2}$ "	35
$\frac{1}{4}$ "	$\frac{1}{2}$ "	12	$\frac{1}{4}$ "	$\frac{3}{8}$ "	38
$\frac{1}{4}$ "	$\frac{3}{8}$ "	14	$\frac{1}{4}$ "	$\frac{1}{2}$ "	40
$\frac{1}{4}$ "	$\frac{1}{2}$ "	25			

For smaller quantities than one rod, one sheet or one tube, add 20 per cent. to list prices. Sheets of any form cut to order.

## SOFT RUBBER TUBING, PURE GUM.

Inside Diameter, $\frac{1}{2}$	$\frac{3}{8}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$ inch.
Per foot.....	.30	.25	.16	.12	.08	.05	.04
							.03 cents.

# CARBON PLATES.

FOR BATTERY AND OTHER PURPOSES.

Long	Wide	Thick	Price	Long	Wide	Thick	Price
3 in.	2 in.	$\frac{1}{4}$	\$0 05	11 in.	6 in.	$\frac{1}{4}$	\$0 50
3 $\frac{1}{4}$ "	2 $\frac{1}{2}$ "	$\frac{1}{4}$	06	11 "	6 "	$\frac{3}{8}$	60
4 $\frac{1}{4}$ "	1 $\frac{3}{8}$ "	$\frac{1}{4}$	06	11 "	6 "	$\frac{1}{2}$	75
4 $\frac{3}{4}$ "	1 $\frac{5}{8}$ "	$\frac{1}{4}$	06	11 "	9 "	$\frac{1}{4}$	75
5 $\frac{1}{4}$ "	1 $\frac{7}{8}$ "	$\frac{1}{4}$	08	11 "	9 "	$\frac{3}{8}$	90
6 "	2 $\frac{1}{4}$ "	$\frac{5}{16}$	08	11 "	9 "	$\frac{1}{2}$	1 10
6 "	1 $\frac{7}{8}$ "	$\frac{5}{16}$	20	12 "	6 "	$\frac{1}{4}$	60
6 "	3 "	$\frac{1}{2}$	25	12 "	6 "	$\frac{3}{8}$	70
7 "	1 $\frac{1}{2}$ "	$\frac{1}{4}$	07	12 "	6 "	$\frac{1}{2}$	80
7 "	4 $\frac{1}{2}$ "	$\frac{1}{2}$	35	12 "	12 "	$\frac{1}{8}$	90
8 "	5 $\frac{3}{4}$ "	$\frac{1}{8}$	30	12 "	12 "	$\frac{1}{4}$	1 00
8 "	5 $\frac{3}{4}$ "	$\frac{1}{4}$	35	12 "	12 "	$\frac{3}{8}$	1 15
9 "	2 "	$\frac{5}{8}$	30	12 "	12 "	$\frac{1}{2}$	1 40
9 "	4 $\frac{1}{2}$ "	$\frac{1}{2}$	40	12 "	12 "	$\frac{5}{8}$	1 50
9 "	6 "	$\frac{1}{2}$	30	12 "	12 "	$\frac{3}{4}$	1 65
9 "	6 "	$\frac{1}{4}$	40	18 "	12 "	$\frac{1}{4}$	3 00
9 "	6 "	$\frac{3}{8}$	55	18 "	12 "	$\frac{1}{2}$	3 50
9 "	6 "	$\frac{1}{2}$	65	18 "	15 "	$\frac{1}{4}$	3 75
10 "	6 "	$\frac{1}{4}$	40	18 "	15 "	$\frac{1}{2}$	4 50
10 "	6 "	$\frac{3}{8}$	55	18 "	18 "	$\frac{1}{4}$	4 75
10 "	6 "	$\frac{1}{2}$	65	18 "	18 "	$\frac{1}{2}$	5 25

Sizes not mentioned in above list cut to order.

Special prices for quantities.

Copper, Platina and Silver Plates, any size and thickness, made to order.

## BATTERY UTENSILS.



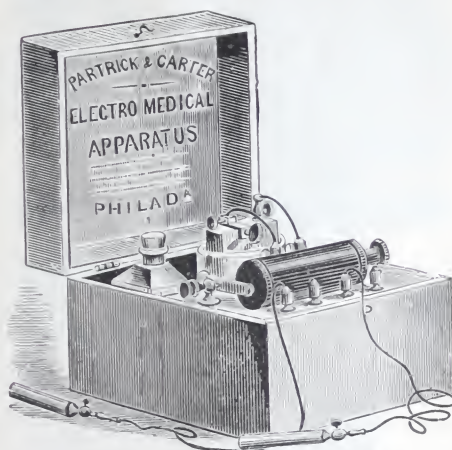
HYDROMETER.

Battery Brushes, each	\$0 25
" per dozen	2 00
" Syringe, No. 6, each	2 00
" " " 6, tubes each	40
" Funnels, gutta-percha	50c. to 1 00
" glass, each	30c. to 50
Hydrometers, for Gravity Battery	45



# PARTRICK & CARTER'S ELECTRO-MEDICAL APPARATUS.

CONSTRUCTED ENTIRELY UPON SCIENTIFIC PRINCIPLES.



This instrument is elegantly nickel-plated, and enclosed in a finely-finished box, with cords, handles and battery, with full instructions for use and application to almost every variety of disease.

## Price List of Apparatus and Appliances.

Electro-Medical Apparatus, complete, nickel-plated .....	\$10 00
Extra Battery, per cell, complete.....	2 00
“ Zincs, per pair .....	40
“ Platina Plate.....	1 00
“ “ with Wood and Binding Post.....	1 25
“ Zinc Clamp.....	25
“ Glass Jar .....	25
“ Cords, with tips, per pair.....	50
“ “ without tips, per foot....	5
“ Handles, nickel-plated, per pair.....	60
“ Bottles for holding fluid .....	7

## Medical Induction Coils, without Battery.

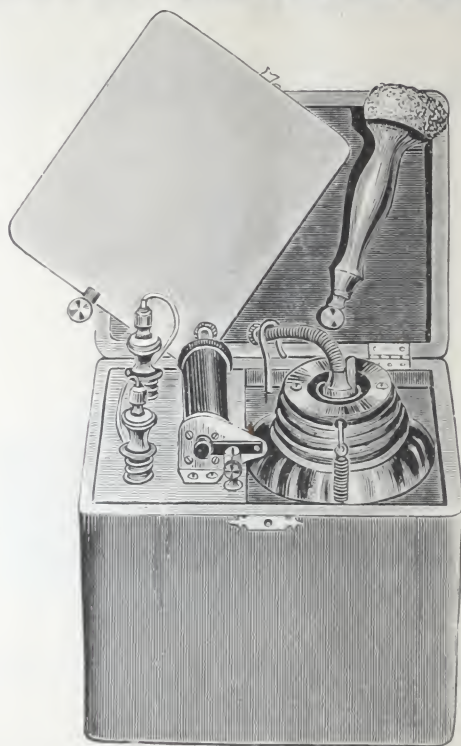
Fine finished Medical Coil, on polished base, with Hand Electrodes, of best quality. Price, \$5.00.

These Coils are very powerful, and can be operated with any Acid Battery. The Unique Electropoion Battery will work them to perfection.

# THE UNIQUE ELECTRO-MEDICAL APPARATUS.

CONSTRUCTED UPON THE MOST APPROVED SCIENTIFIC PRINCIPLES.  
DESIGNED FOR PROFESSIONAL AND PRIVATE USE.

Manufactured only by



PARTRICK & CARTER.

We call the attention of the trade, medical profession and the public in general to the above

## First-Class Electro-Medical Outfit,

which is without question the most **PRACTICAL, RELIABLE, DURABLE** and **CHEAPEST** Apparatus of the kind yet offered.

The Apparatus is neatly and compactly built and all parts fit to a nicety, thus making a most convenient and portable machine. The instrument is handsomely nickel-plated and placed in a finely-finished mahogany box, with handle on top for carrying.

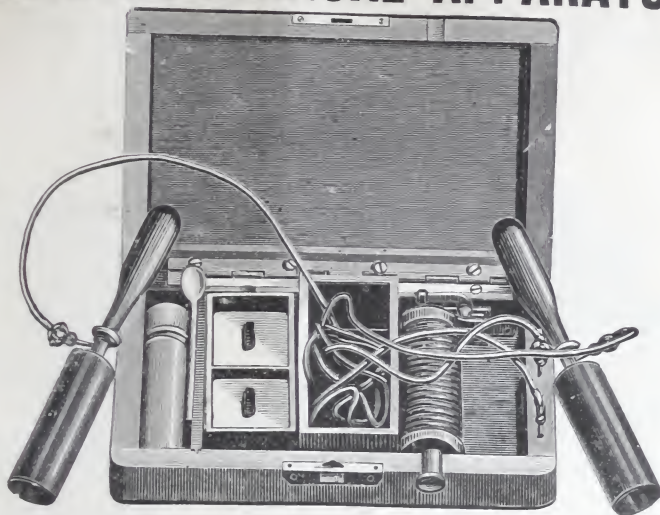
With the Apparatus we furnish all the necessary electrodes, such as nickel-plated handles, sponge-holder, foot-plate, silk cords, and complete directions and instructions for operating and applying electricity.

The Battery used is the Grenet, which is simple in form, and always ready for use. The battery can be kept charged for months, and is always ready for use by simply depressing the zinc rod.

PRICE OF THE APPARATUS, COMPLETE, \$7.50			
"	"	BATTERY ALONE, - - -	1.50
"	"	FOOT-PLATE ALONE, - - -	.50
"	"	SPONGE-HOLDER, - - -	.65

Further particulars and special prices to the trade upon application.

# GAIFFE PORTABLE ELECTRO-MEDICAL APPARATUS.

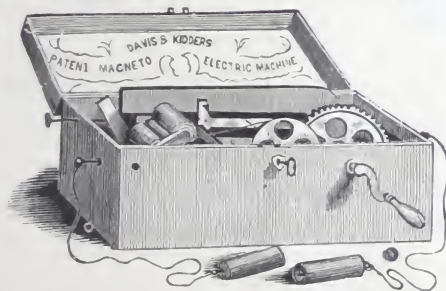


No. 200.

No. 200.—Single Cover Gaiffe System Battery, producing two currents, primary and secondary, containing two brass sponge holders, one pair silk conducting cords. Mounted in highly polished mahogany case; size,  $6\frac{1}{2} \times 4 \times 1\frac{1}{2}$  inches.

COMPLETE, WITH DIRECTIONS, \$6.50.

## MAGNETO-ELECTRIC MACHINES.




Sponge Holder.

No. 1, Complete, in Fine Finished Case, \$8.00  
 " 2, " " " " " 5.00

## MEDICAL APPLIANCES.

Appliances in Case.....	\$15 00	Electro-plated Vaginal Electrode.	\$1 75
Sponge Handles, fine finish, wood, each.....	75	Urethral Insulated Silver-Plated Tip.....	1 75
Sponge Handles, fine finish, side use.....	1 25	Glass Eye Cup, to be filled with water or sponge.....	1 75
Insulated Throat Electrode.....	1 50	Ear Electrode, with Funnel.....	3 00
Silver-plate Tongue ".....	1 50	" " with Clasp for sponge.....	1 50
" " Rectal ".....	1 50	Cords per pair, Silk.....	65
Uterine Electrode.....	1 50	" " Cotton.....	40
Metal Brush, Anæsthesia.....	1 50		

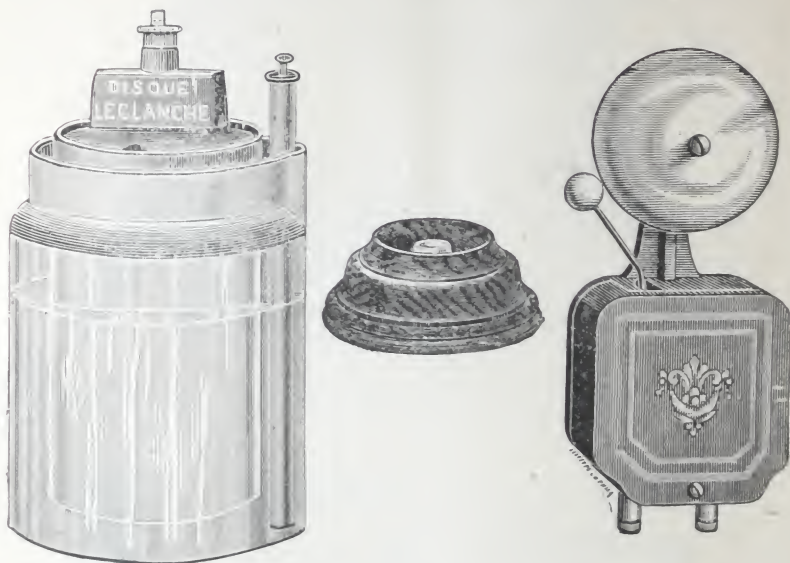
 Medical Batteries of every description repaired at the shortest notice.

We sell every style of Electro-Medical Apparatus in the market at manufacturers' prices, and manufacture to order any special apparatus that may be required for the application of electricity.



# ELECTRIC CALL BELL.

OUTFIT COMPLETE.



Consisting of one 2½ inch Electric Bell, one ash or black walnut Push-button, one Cell Leclanche Battery, 50 feet of insulated electric wire, staples, etc.

For use in connection with front door, parlor, library, dining-room, sick-room, servants' room, stable to call coachman, or any other place where a Call Bell is required.

---

**PRICE, \$2.50.**

---

This outfit is strictly first-class material in every respect, with plain instructions, so that any person with ordinary ability can put it up in working order.

---

Send for Complete Catalogue of Electric Bells, Burglar Alarms, Annunciators and Electric Bell Hangers' Supplies.

# ELECTRICAL SCIENTIFIC WORKS.

SCIENTIFIC WORKS UPON ANY SUBJECT FURNISHED AT  
PUBLISHERS' PRICES.

Abernethy. An Outline of Commercial and Railway Telegraphy, in Theory and Practice.	\$2 00
Algave and Boulard. The Electric Light; its History, Production and Application.	3 00
Anderson. Lightning Conductors; Their History, Nature and Mode of Application.	6 50
Angell. Elements of Magnetism and Electricity, with Practical Instructions for Experiments.	60
Atkinson. The Elements of Static Electricity.	1 50
Ayrton. Practical Electricity; A Laboratory and Lecture Course for First Year Students.	2 50
Beechey. Electro-Telegraphy.	2 50
Benjamin. The Age of Electricity, from Amber-Sun to Telephone.	2 50
Blakesley. Alternating Currents of Electricity.	2 50
Botome. The Dynamo; How Made and How Used. A Book for Amateurs.	1 00
Brennan. A Popular Exposition of Electricity, with Sketches of some of its Discoveries.	75
Cavendish. Electrical Researches.	3 50
Clarke & Sabine. Electrical Tables and Formula for the use of Telegraph Inspectors and Operators.	5 00
Cook. Magnetism and Electricity.	40
Culley. Hand-Book of Practical Telegraphy.	6 00
Cunningham. Electricity Treated Experimentally. For the use of schools and students.	1 50
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Day. Exercises in Electrical and Magnetic Measurements.	1 40
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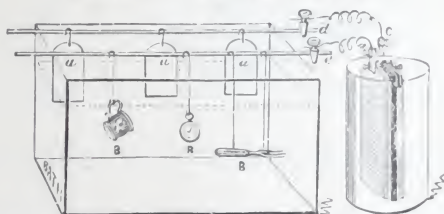
# ELECTRO-PLATING.

Electro-plating is an art or business that can BE READILY ACQUIRED by any person of ordinary intelligence. A little patience and practice will so perfect a person in the business that they can do as good a job of electro-plating as could be desired.

We have arranged a few outfits which are adapted to both the amateur and practical plater. Set No. 1 we would especially recommend for the amateur and for experimental use. Sets Nos. 2 and 3 will answer for a watch and jewelry repairer who has small quantities of work to plate, such as rings, pins, charms, &c. Set No. 4 includes everything that is necessary to start business with for the regular plater, watchmaker, jobber and manufacturer. Set No. 5 is large enough to plate any of the larger wares, such as ice pitchers, butter dishes, tea sets, &c.

If parties wish any goods not enumerated in this list, by making known their wants to us, we will give them our personal and prompt attention.

## Electro-Plating Outfits.



SMEE BATTERY AND BATH IN OPERATION.

The engraving above represents the operation of plating, the position of the Anode and Cathode, the Battery and the Bath. The Battery has its centre or positive plate connected to a rod extended across the trough, to which are suspended the Anodes *a, a, a*, of gold, silver or copper, or whatever other metal you may wish to obtain a deposit from. The other plates of the Battery, or the negative elements, are connected with the remaining rod across the trough, to which are suspended the articles to be plated, *b, b, b*.

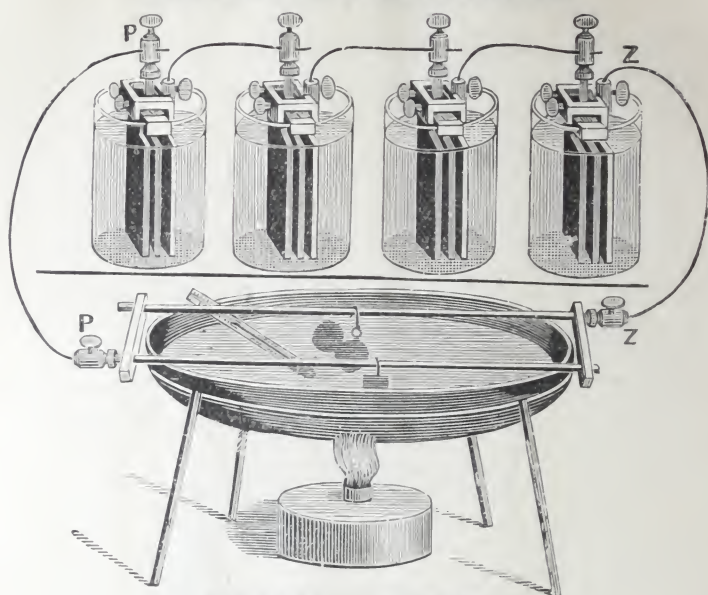
## Complete Sets of Plating Apparatus.

We manufacture complete sets of plating apparatus for the above purpose. The whole outfit is put up in a neat box, with printed directions giving full information. The solutions are perfectly pure, being our own manufacture.

## SPECIAL NOTICE.

All parties desiring electrical, scientific or experimental work done will find it to their advantage to give us a trial. We guarantee in all cases the lowest prices and best workmanship. Material for experimenting in electricity always on hand. Any instrument or apparatus desired can be made from drawings or written description.

## ELECTRO-PLATING OUTFITS.



APPARATUS WORKING.

## PRICES OF ELECTRO-PLATING OUTFITS.

## No. 1 OUTFIT.

Consists of 1 Cell Smee Battery, Plating Solution (half pint), Silver Anode, Wire, Burnisher and Book of Instruction.....\$5 00

## No. 2 OUTFIT.

Consists of 1 Cell Large Smee Battery, 1 Pint Plating Solution, large Anode, Wire, Burnisher and Book of Instruction.....\$8 00

## No. 3 OUTFIT, COMPLETE. PRICE, \$20.00.

2 No. 1 Smee Batteries.....	\$6 00
1 Extra Glass Cup.....	50
2 Rods, 18 in. long, with connections.....	1 00
2 10-foot Conducting Wires.....	20
1 Book of Instruction.....	1 00
1 Glass Funnel.....	65
1/2 Pound Quicksilver.....	40
1 Glass Rod.....	25
1 Graduate Glass.....	60
1 Scratch Brush.....	1 00
1 Sand Brush.....	45
1 Fine Brush.....	45
3 Burnishers, assorted.....	3 00
1 Pound Hanging Wire.....	60
1 Box Pumice Stone.....	25
1 " Whiting.....	25
1 " Rouge.....	50
1 " Crocus.....	25
1 Quart Silver Solution.....	2 50
1 Silver Anode.....	1 00

# ELECTRO-PLATING OUTFITS.

## No. 4 OUTFIT.—JEWELER'S SET.

In this set is included all that is necessary for a jeweler or watch repairer to start business with. It comprises all the batteries, solutions, chemicals and apparatus that are required, with instructions, viz:—

- |   |                                       |
|---|---------------------------------------|
| 2 Two-quart Smee Batteries.                       | Chamois Leather, for cleaning work.   |
| 2 " Solution Dishes.                              | 1 Box Ground Pumice Stone             |
| 1 Stand, with Pan.                                | 1 " Whiting.                          |
| 1 Pint Cyanide Silver, with bottle.               | 2 Connecting Cups.                    |
| $\frac{1}{2}$ Pound Cyanide Potassa, with bottle. | 1 Graduating Glass.                   |
| 1 Test Bottle Nitric Acid, with ground stopple.   | 2 Glass Rods, for stirring solutions. |
| $\frac{1}{2}$ Pound Mercury and Bottle.           | 1 Hand Brush.                         |
| 1 Ounce Silver Plate and Wire.                    | 2 Burnishers.                         |
| 1 Copper Plate and Wire.                          | 1 Bottle of Crocus.                   |
| 4 Pennyweights Gold Plate and Wire.               | 1 Piece of Chamois Leather.           |
| 1 Scratch Brush.                                  | 1 Bottle of Rouge.                    |
| 1 Lamp.   | 1 Bottle of Gold Solution.            |
| 1 Soft Brush, for cleaning work.                  | 1 Blowpipe.                           |
|   | 1 Box and Thermometer.                |
|   | 1 Two-quart Bottle Silver Solution.   |

These articles are all packed in a box, with instructions, and can be sent by express to any part of the world perfectly safe.

**Price, for the Complete Outfit, \$35.00.**

## No. 5 OUTFIT—SILVER AND GOLD-PLATER'S SET.

If persons, in ordering, do not want all the articles enumerated in the mentioned sets, they can select whatever they may require, which, of course, will make the set cost less.

- |   |  |
|---|--|
| 4 Two-quart Smee Batteries, Connections, Stand, Pan, Thermometer, &c. | 2 Decomposing Dishes.                        |
| 4 Pints of Silver Solution.   | 1 Box of Pumice Stone.                       |
| 1 Bottle of Cyanide of Copper.  | 1 Box of Whiting.                            |
| 1 Bottle of Nitrate of Mercury.                                       | 1 Bottle Bright Mixture, for bright plating. |
| 1 Bottle of Cyanide Potassa.  | 1 Plate of Silver.                           |
| 1 Graduating Glass.   | 1 Plate of Copper.                           |
| 1 Bottle of Crocus.   | 24 Filtering Papers.                         |
| 1 Bottle of Rouge.  | 3 Connecting Cups.                           |
| Glass Sticks and Wires.   | 1 Pound of Mercury.                          |
| Sawdust Brushes.  | 2 Burnishers.                                |
| 1 Box of Sawdust.   | Brass Blowpipe.                              |
| 2 Brushes.  | 1 Lamp.                                      |
| 2 Scratch Brushes.  | 1 Bottle Gold Solution.                      |

These articles are all packed in a box, with Book of Instructions on Plating in Gold and Silver.

**Price, Complete, \$45.00.**

Baths can be easily made of wood—yellow pine or cedar can be used—should be well coated with white lead or black asphaltum varnish, and well dried before putting in solution. Glass is, of course, the best Bath, but is seldom used on account of the great cost. Wooden Baths made to order. (For prices of Baths, see page 62.)

Scientific works of every description furnished at publishers' prices.

For Books on Electro-plating, and all electrical purposes, see pages 51-52.



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## **ESTIMATES**

FOR

# **NICKEL-PLATING OUTFITS.**

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For the convenience of parties intending to commence Nickel-Plating, we annex a few estimates based on present prices, which will be adjusted to suit market.

---

### **Amateur Outfit, Price \$12.50.**

Consisting of one of our Nickel Batteries, one 6-quart Square Glass Jar for Solution, 2 gals. of Nickel Solution, 2 small Nickel Anodes for Solution, with directions for use.

---

### **Twenty Gallons Outfit, Price \$60.00.**

20 gallons Nickel Solution, in Carboy, or Salts, if at a distance, or too cold to ship Solution.

Square Wood Tank.

One of our Nickel Batteries.

3 Nickel Anodes, about 70 square inches, or 5 lbs., Rods and Connection.

---

### **Fifty Gallons Outfit, Price \$110.00.**

Nickel Solution in barrel, or Salts.

2 in. Wood Tank, iron-braced and lined, of any proportion desired.

2 of our Nickel Batteries.

6 Nickel Anodes, 25 lbs.

We pack in the tanks, saving freight.

---

### **One Hundred Gallons Outfit, Price \$200.00.**

Nickel Solution in barrels, or Salts.

2 in. Wood Tank, iron-braced and lined, of any proportion desired.

12 Nickel Anodes, 5x8 in. for 2 Rows, 50 lbs.

Resistance Coil, Hydrometer, etc., etc.

Samples Polishing Material, etc., etc.

4 of our Nickel Batteries.

# LITTLE GIANT NICKEL-PLATING OUTFITS.

## ELECTRO-PLATING OUTFITS.

We submit a few estimates for outfits, including the "Little Giant." Where the uses for which such outfits are clearly indicated and the selection of goods left with us, we can insure a satisfactory selection, as we employ experienced platers, who understand fully the requirements of the business.

### OUTFIT No. 1.

"Little Giant" Electro-plating Machine.....	\$100 00
Pure Nickel Salts and Anodes for 20 gallons solution.....	20 00
Heavy Wood Tank for same, with Rods and Connections.....	15 00
	<hr/> \$135 00

### OUTFIT No. 2.

No. 1 Outfit as above.....	\$145 00
Material for 4 gallons Silver Solution.....	10 00
Oval White China Tank for same, with Rods and Connections.....	8 00
Material for 1½ gallons Cyanide Copper Solution and Jar.....	5 00
Material for 1½ gallons Brass Solution and Jar.....	5 00
	<hr/> \$173 00

### OUTFIT No. 3.

"Little Giant" Electro-plating Machine.....	\$100 00
Pure Nickel Salts and Anodes for 50 gallons Solution.....	50 00
50 gal. Tank, 2 in. stuff, lined, Rods, Connections, 48x18x16.....	25 00
Polishing Lathe No. 2.....	16 00
One Potash and 1 Hot Water Iron Tank, 20x14 inch, 12 deep.....	7 50
Sample Muslin Wheel and Polishing Material.....	2 50
One Copy Watts' Electro-Metallurgy.....	
	<hr/> \$201 00

### OUTFIT No. 4.

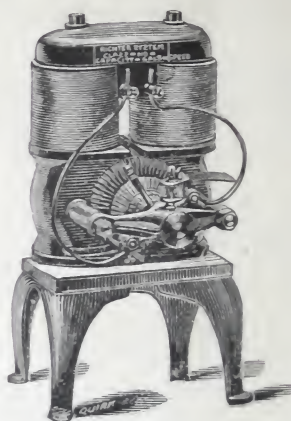
"Little Giant" Electro-plating Machine.....	\$100 00
Pure Nickel Salts and Anodes for 75 gallons Solution.....	75 00
Seventy-five gallon Tank, 60x18x16 inside, 2 inch stuff, iron braced and lined, with Rods and Connections.....	30 00
Extra Heavy Polishing Lathe, No. 3, Page 61.....	16 00
One Potash and 1 Hot Water Tank, 24x20x12.....	12 00
Muslin and Cotton Flannel Wheels, Polishing Material, XXX Lye, Brushes, Slinging Wire, etc.....	17 00
One Copy Watts' Electro-Metallurgy.....	
	<hr/> \$250 00

### OUTFIT No. 5.

"Little Giant" Electro-Plating Machine.....	\$100 00
Pure Nickel Salts and Anodes for 100 gallons Solution.....	100 00
One hundred gallon Tank, 72x18x18 inside, 2 inch stuff, iron braced and lined, with Rods and Connections.....	35 00
Extra Heavy Polishing Lathe No. 3.....	16 00
One Potash and 1 Hot Water Tank, 24x20x18.....	16 00
Copper and Brass Solutions, each with 3 gallon Tank.....	20 00
Muslin and Cotton Flannel Wheels, Polishing Material, XXX Lye, Brushes, Slinging Wire, etc.....	17 00
	<hr/> \$304 00

One Copy of Wahl's Galvano-Plastic Manipulations, 650 pages, a complete work on Electro-Plating, Bronzing, etc., with this outfit.

# DYNAMO ELECTRO-PLATING MACHINES.



THE LITTLE GIANT.

The LITTLE GIANT ELECTRO-PLATING MACHINE has proved itself to be one of the strongest and most efficient in operation of any machine yet discovered for the deposition of metals, by the aid of electricity. It requires little or no attention, is certain in its action, and has the Electric Balance so perfect that any heating is rendered impossible. By a very original method in the arrangement of the magnetic field is insured the perfect government of polarity, and renders any change in the direction of the current absolutely impossible.

Its superiority consists:—

First.—It is kept cool without the use of water or fans by means of its construction, which renders it impossible to create any heat at all.

Second.—It does not require a protection as other machines do to prevent the reverse of current.

Third.—The construction of our machines is so simple that should repairs at any time be necessary, that part which may be affected or out of order can be removed, repaired and replaced without the least disturbance.

Fourth.—Absolutely no sparking at the commutator, and, therefore, out-wear all others.

Fifth.—The machines will do more work for the same power and first cost than any other known form of machine.

Sixth.—Without any question the LITTLE GIANT machine is the most durable plater in the market, the simplest in construction, all parts being in sight, and easy to get at. In proof of durability of our machines we will at any time be pleased to forward references from numerous plating establishments.

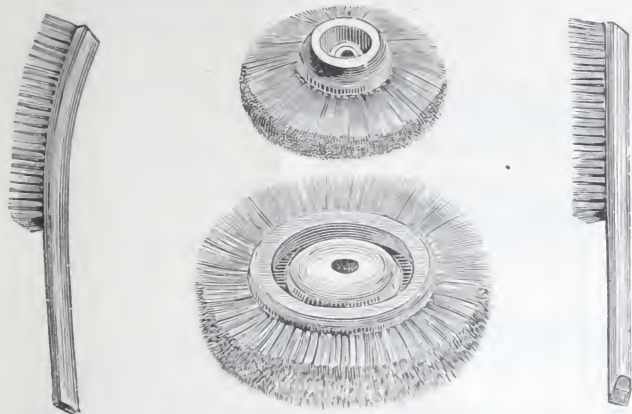
## PRICE LIST OF PLATING MACHINES.

No. 1	Plating Machine, treats 60 gallons.....	\$100 00
No. 2	" " " 150 " .....	175 00
No. 3	" " " 300 " .....	300 00
No. 4	" " " 600 " .....	500 00
No. 5	" " " 900 " .....	750 00



# BRUSHES FOR ELECTRO-PLATERS, JEWELERS, BRASS AND METAL FINISHERS.

TAMPICO BRISTLES, BRASS AND STEEL WIRE.



## Beveled Wheel Brushes.

Tampico, 7 Row, per dozen.....	\$ 6 50
Bristle, 7 Row " .....	12 50

## Square Wheel Brushes.

Tampico, 6 Row, 8 in. diameter, per dozen.....	9 00
Extra Bristle, 6 Row, 8 in. diameter, " .....	18 00

## Fine or Coarse Brass and Steel Scratch Brushes.

### Brushes for Satin Finish.

### Straight Handled Brushes.

Mixed, 1 Row, per dozen.....	\$1 00	Extra Bristle, per dozen.....	\$1 50
" 2 " " " .....	1 50	" " " " .....	2 00
" 3 " " " .....	2 00	" " " " .....	3 00
" 4 " " " .....	2 50	" " " " .....	3 50
" 5 " " " .....	3 25	" " " " .....	4 25
" 6 " " " .....	4 00	" " " " .....	5 00
Battery Brushes, common, per dozen.....	3 00		

### Curved Handled Brushes.

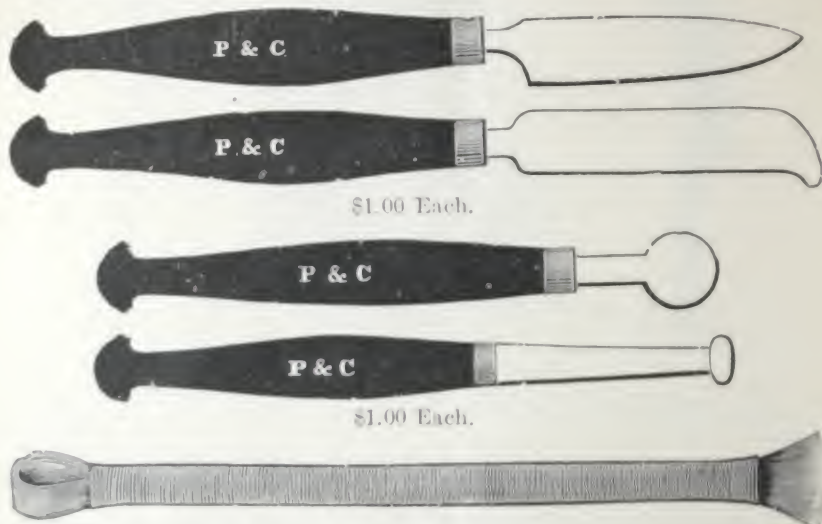
Extra Bristle, 1 Row, per doz..	\$1 75	Extra Bristle, 4 Row, per doz..	\$4 00
" " 2 " " ..	2 25	" " 5 " " ..	4 75
" " 3 " " ..	3 25	" " 6 " " ..	5 25

### Cotton Potash Brushes.

Brushes of all shapes and sizes furnished to order, and of any desired pattern.

## BURNISHERS.

We keep in stock a large assortment of Burnishers, both of steel and bloodstone. The steel Burnisher we manufacture to order, and if any particular shape is required for certain kinds of work, by sending simple drawing, or letting us know what is required, we can make to order. Our steel Burnishers are made from the very best *diamond* steel, hardened and polished in the best manner. The bloodstone Burnisher we import, and can, consequently, sell at first prices. Our Burnishers have always given the *very best* satisfaction.



\$1.00 Each.

\$1.00 Each.

Straight Brass Wire Scratch Brush, each ..... \$1.00

BLOODSTONE BURNISHERS FROM \$1.50 TO \$3.00

## SQUARE IRON TANKS.

16 x 16 inches,	10 inches deep.	.....	\$3 50
20 x 14 "	12 "	.....	3 75
23 x 15 "	15 "	.....	6 00
24 x 20 "	18 "	.....	8 00
36 x 20 "	12 "	.....	14 00
36 x 24 "	16 "	.....	15 00
48 x 24 "	16 "	.....	17 00
60 x 20 "	12 "	.....	17 25
96 x 20 "	12 "	.....	24 25

With overflow and discharge plug, from \$1.00 to \$3.00 extra.

A gallon contains 232 cubic inches.

## ROUND IRON KETTLES OR CALDRONS.

6 gallon	.....	\$2 00
10 "	.....	2 50
15 "	.....	4 00
20 "	.....	5 00
30 "	.....	6 00

# MACHINES FOR POLISHING AND BUFFING

LATHES AND POLISHING MACHINES OF  
EVERY DESCRIPTION.

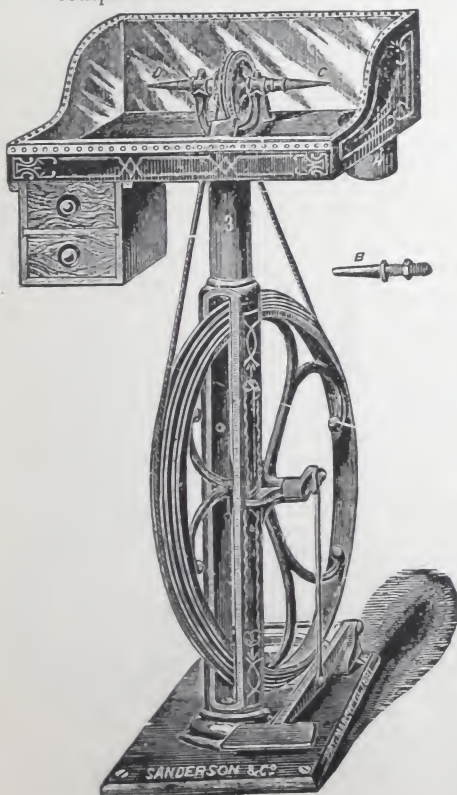
## Eureka Polishing Lathe.

This Lathe head has a spindle 9 inches long,  $\frac{3}{8}$  inch thick, one end of which is threaded and tapers to a point for holding brush, buff and other polishing wheels. The other end forms an arbor for holding emery and other grinding wheels, also for small drills.

The table is entirely of iron, excepting the top and drawer, which are of walnut.

The iron work is japanned and the wheel has a flat surface, with flanges on edges to prevent the belt from slipping off.

Price of Table.....\$ 8 00  
" complete.....10 50



## Premium Polishing Lathe.

Runs very high speed, and first-class in every particular.  
Price, complete.....\$30 00

## Heavy Polishing and Buffing Lathe.

With flat Spindles and triangular Collars.....\$35 00  
Long Spindles.....40 00  
Portable Belt Polishers at all prices, according to size.

## Hand Buffs.

### LEATHER.

	Per doz.
Plain .....	\$0 75
Heavy.....	1 25
Half round.....	1 00
Round.....	1 25

## Hand Buffs.

### FELT.

	Per doz.
Plain.....	\$2 50
Heavy.....	2 50
Round.....	3 25

Round Buffs, all sizes and thicknesses, to order. Steel Arbors for Buffs, on hand and to order.



## CHEMICALS FOR NICKEL-PLATING.

Nickel Anodes, size to order, per pound.....	\$1 50
Nickel and Ammonia Sulphate (nickel salts), per pound .....	75
Composition for Polishing, per pound. ....	20
Rouge for Finishing.....	75

### For Silver and Gold-Plating.

Silver Anodes, per ounce.....	\$1 65
Gold " " pennyweight. ....	1 40
Silver Nitrate, per ounce .....	1 20
" Chloride " .....	1 65
" Cyanide, per ounce.....	2 25
Gold Chloride, 15 grain bottle.....	1 00
Carbon Bisulphide, per pound .....	75
Plumbago, pure (electrotypers'), per pound.....	1 00
Cyanide of Potash, 1 pound bottle.....	75
" " 10 " cans, per pound.....	70
Pumice Stone, per pound .....	10
Crocus, per pound.....	25
Whiting " .....	10
Chamois Skins, each.....	50

### Platinized Silver Plates.

#### FOR SMEE BATTERY.

2½ x 3½, each.....	\$ 75
3 x 6, " .....	1 00
4 x 7, " .....	1 75
6 x 9, " .....	2 75

With Connections, 25 cents extra.

Copper, Platinum and Silver Plates, any size and thickness, made to order.

### Wood Tanks for Solutions.

50 Gallons, 48x18 inches, 18 inches deep			\$15 00
75 "			20 00
100 "			24 00
Glass Tanks	10 gallons.	14 gallons.	30 gallons.
With Iron Frames	\$12.00	\$16.00	\$35.00 each.

### Rolled Zinc Plates.

Rolled Zinc Plates of any size or thickness, or cylinders (cast or rolled), of every description used in telegraphing or electro-plating, always on hand or made to order.

Rolled Zinc Plates, Regular Size, 15 Cents per pound.

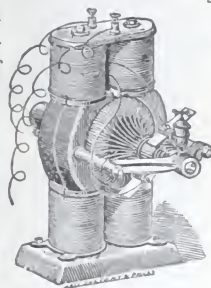
Rolled Zinc Plates, Cut to Order, 20 Cents per pound.

# ELECTRIC LIGHT APPARATUS.

## LITTLE GIANT DYNAMOS.

FOR ARC AND INCANDESCENT LIGHTING.

THE LITTLE GIANT DYNAMO is the simplest in construction, most perfect in design and workmanship, and contains the least amount of materials of any effective generator yet constructed. It is so arranged that the whole amount of current generated is delivered into the outer circuit, making the efficiency of this machine such that the greatest amount of light is produced for the least expenditure of power; in fact, the whole of the power applied at the driving-pulleys is actually made available for the production of light, with the exception of a very small percentage absorbed by the resistance of the current and the friction of the journals.



The extreme simplicity of the machine reduces its liability to derangement to a minimum, and enables repairs *when required* to be made at the least possible expense of time and money.

### Price List of Arc Dynamos.

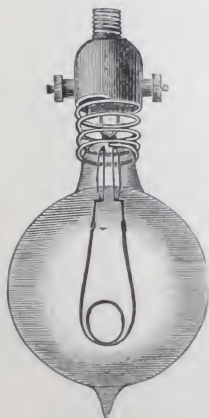
One Light Dynamo	\$150 00
Two " "	200 00
Three " "	300 00
Four " "	400 00
Five " "	500 00
Six " "	600 00
Seven " "	700 00
Eight " "	800 00
Nine " "	900 00
Ten " "	1000 00

Lamps, \$60.00 each.

### Price List of Dynamos for Incandescent Lighting.

Fifteen Lights	\$210 00
Twenty-five Lights	262 00
Thirty Lights	300 00
Forty " "	405 00
Fifty " "	510 00
Seventy-five Lights	750 00
One Hundred Lights	900 00
One Hundred and Fifty Lights	1200 00
Two Hundred Lights	1500 00
Three Hundred Lights	2400 00
Five Hundred Lights	3375 00

Incandescent Lamp, with Sockets,  
Each, \$2.25.

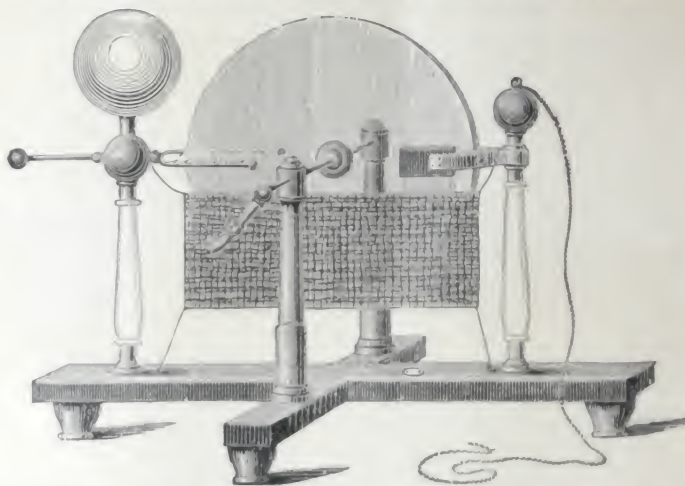


INCANDESCENT  
LAMP.



ARC LAMP.

## Apparatus for Experimenting in ELECTRICITY AND MAGNETISM.



**Friction Machine.**—Glass plate, sixteen inches in diameter, solid walnut base, finely polished, felt rubbers of best quality, insulated, positive and negative conductors of brass; Rodger's condenser, silk apron, box of amalgam, and four feet of brass chain..... \$25 00



1.



2.



3.



4.

No. 1. Leyden Jar..... One pint, \$1 25      One quart, \$1 50  
 " 2. "..... Half gal, 2 00      " gallon, 2 50  
 " 3. Decomposing Water Apparatus..... 3 00  
 " 4. Water Rheostat, for diminishing the intensity of a current..... 5 00

### Permanent Magnets.

No.	Each	Horseshoe Magnets, each	
2	14	14	\$0 10
2 1/2	14	14	12
3	14	14	15
4	14	14	25
5	14	14	40
6	14	14	60
7	14	14	80
8	14	14	1 10
10	14	14	2 00
12	14	14	2 75

Permanent Magnets of any size made to order.

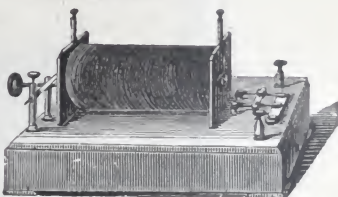




## Apparatus for Experimenting in Electricity and Magnetism.

## INDUCTION COILS.

Coil with Automatic Break, Spark 1/8 in.				\$6 00
1/4	1/4	1/4	1/4	8 00
1/4	1/4	1/4	1/4	12 00
1/4	1/4	1/4	1/4	18 00
1/4	1/4	1/4	1/4	35 00
1/4	1/4	1/4	1/4	40 00
1/4	1/4	1/4	1/4	60 00
1/4	1/4	1/4	1/4	100 00
1/4	1/4	1/4	1/4	125 00



Induction Coils, any size, made to order.

## ELECTRICAL INCUBATOR OUTFITS.



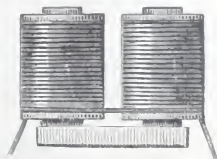
ADJUSTABLE THERMOSTAT. PRICE, \$2.50.

These Thermostats can be used in Incubators for giving an alarm when temperature rises too high or falls too low for hatching purposes. When properly connected with BATTERY, INCUBATOR DAMPER and DAMPER ACTUATOR the heat in the Incubator is controlled automatically by opening and closing the damper electrically. From 2 to 4 cells of some form of Bluestone Battery is generally employed to do this work.

Price, Incubator Dampers each.....	\$3 00	Price, Damper Actuators, each.....	\$2 50
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## ELECTRO-MAGNETS.

Small Magnets.....	\$1 50 to \$2 00
Large " .....	2 00 to 4 50

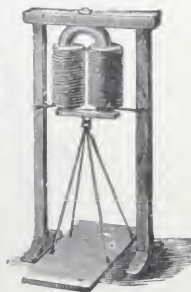
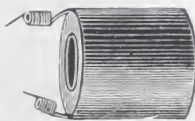
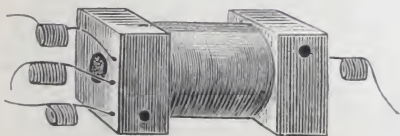


Electro-Magnets made for special purpose to order, of any size and form.

## SNAPPER SOUNDERS.



With Book of Instructions, each.....	\$0 25
“ “ “ per dozen.....	1 75



No. 1.

No. 2.

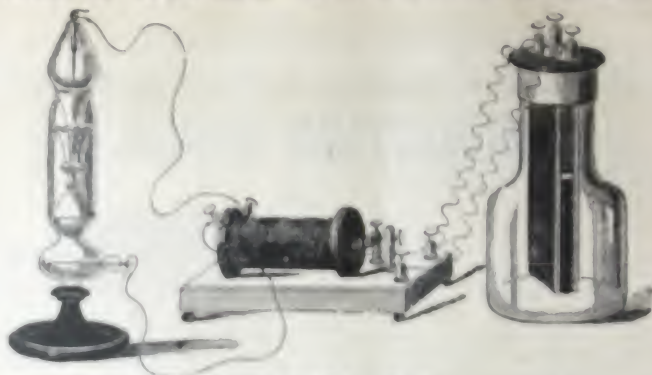
No. 3.

No. 1.—Induction Coil, silk wire.....	\$1 25
“ 2.—Silk-Wound Bobbins, 36 wire, each.....	50
“ 3.—Electro-Magnet, mounted on strong frame, with armature and hook.....	8 50

## BAR MAGNETS.

Polished Cast Steel Bar, $\frac{1}{4}$ x $\frac{3}{8}$ x 4 inches, each.....	\$0 40
" " " $\frac{1}{4}$ x $\frac{3}{8}$ x 6 " " .....	50
" " " $\frac{1}{4}$ x 1 x 8 " " .....	75
" " " $\frac{1}{4}$ x 1 $\frac{1}{4}$ x 10 " " .....	1 00
Round Bar Magnets, $\frac{1}{4}$ to $\frac{3}{8}$ inch diameter, 4 to 6 inches long.....	50
Special Magnets to order.	

# Apparatus for Experimenting in Electricity and Magnetism.



## INDUCTION COIL.

With a set of six Geissler's Tubes, six inches long, and improved Bichromate of Potash Battery, contained in a neat box, with divisions for each piece of apparatus. Price, \$16.50.

## GEISSLER TUBES.

### COMPLETE IN SETS.

No. 116, 6 inches long, 4 to set \$2.50

" 100, 8 " " " 3.15

" 105, 8 " " " 3.75

" 108, 8 " " " 4.15

" 100, 8 " " " 4.75

## ROTATORS.

Or Small Electrical Engines for Rotating Geissler's Tubes.

No. 1, for 6 to 8 inch Tubes \$10.00

" 2, " " " " 12.00



## EDISON INCANDESCENT LAMPS.

The following is a list of our Standard Edison Miniature Lamps:—

1-Candle Lamp.—Resistance 2 to 3 ohms. Requires an electromotive force of from 3 to 4 volts, 1.5 amperes of current. Price, \$1.50 each.

2-Candle Lamp.—Resistance 5 to 7 ohms. Requires from 4½ to 5½ volts electromotive force, and 1.25 amperes of current. Price, \$1.50 each.

4-Candle Lamp.—Resistance 14 to 16 ohms. Requires from 7 to 8½ volts electromotive force, and 1.50 amperes of current. Price, \$1.50 each.



Full size cut of the 1-Candle Power Lamp.

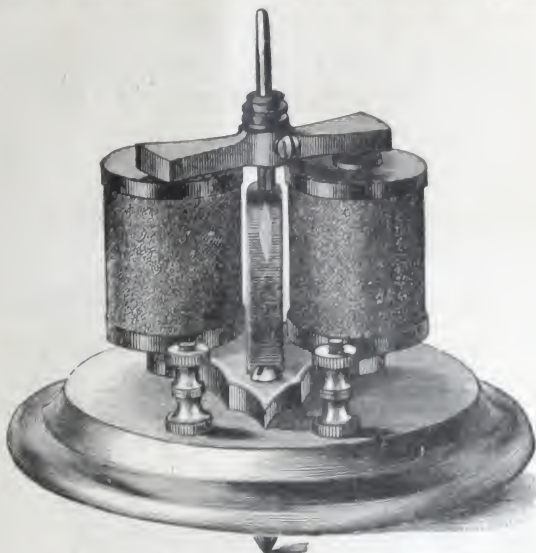


Full size cut of the 2-Candle Power Lamp.



Full size cut of the 4-Candle Power Lamp.

# ELECTRIC MOTORS AND TOYS.

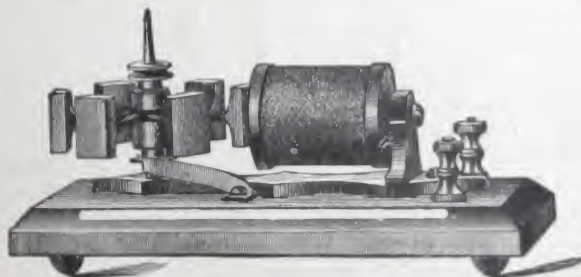


No. 1.—(Above cut is three-quarters actual size.)

## FLYING WING MOTOR.

This is the simplest form of motor we make. It is very compact, neat and efficient, and can be used for running small paper figures and light mechanical toys. It can easily be run with one cell of battery. The spindle above the pulley on all our small motors is designed to hold cards, revolving at a high rate of speed. It packs in a box  $4 \times 4 \times 3\frac{1}{4}$  inches, and weighs, when packed, three quarters of a pound.

Price (without battery).....	\$2 00
(with .....	3 50



No. 2.—(Above cut is about one-half actual size.)

## STAR ARMATURE MOTOR—One Magnet.

The above cut represents another sample form of electro motor, with but one magnet. The armature consists of a centre or hub, supporting six lugs, which are alternately attracted by the magnet, giving it a rotary motion. To the vertical shaft is fixed a metal pulley for running small mechanical toys. One cell of battery will run it easily. It packs in a box  $2\frac{1}{4} \times 5 \times 3\frac{1}{4}$  inches, and weighs, when packed, three-quarters of a pound.

Price (without Battery).....	\$2 35
(with .....	3 35

SEND FOR CATALOGUE OF ELECTRIC BELLS, ETC.

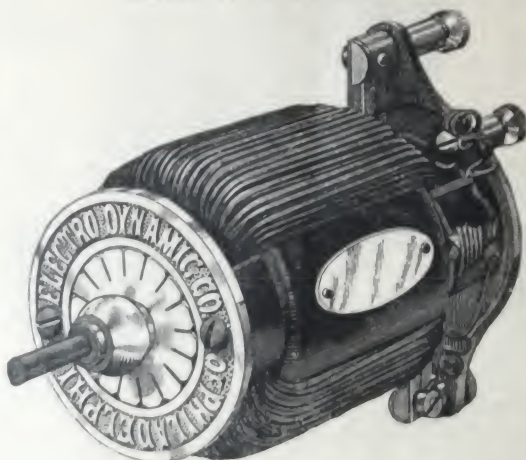


# THE ELECTRIC HOUSEHOLD MOTOR.

THE NEW AND ONLY  
PRACTICAL ELECTRICAL MOTOR FOR THE DWELLING, THE COUNTING-  
HOUSE AND THE LABORATORY, ETC., ETC.

WEIGHT, 40 OUNCES.

SIMPLE IN CONSTRUCTION.  
STRONG AND DURABLE.



LOW IN PRICE.  
ALWAYS READY FOR USE.

This is the only engine in the world which can lift 1000 times its own weight one foot in one minute.

**No Danger, No Noise, No Heat, No Fumes.**

With this motor the sewing-machine, instead of bringing ill-health and misery upon women, and a sure inheritance of woe to their children, becomes a pleasant occupation.

One can be refreshed at pleasure with a delicious breeze in sultry weather from a portable fan, and the laboratory and household are supplied with a portable power requiring no shafting.

More than \$100,000 have been spent in perfecting this machine, in special tools for its manufacture, so as to bring it within the reach of all.

## PRICES.

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# INDEX.

	PAGE.
Adjustment Screws.....	25
Annunciators, &c.....	Yellow Leaf 31
Apparatus for Experiments.....	64
Axes.....	31
Bar Magnets.....	65
Battery Directions.....	23
" Telephone Bell.....	15
" Utensils.....	49
Batteries.....	16-33
Bichromate Battery.....	20-21
Blinding Posts.....	35
Blasting Machines.....	44
Body Belts.....	28
Books on Electricity.....	51-52
Braces and Bits.....	81
Brackets for Office Wires.....	54
" Poles.....	25
Bunsen Battery.....	18
" Cell Battery.....	20
Cables, Elevator.....	58
" Submarine.....	58
" Waring Bunched.....	58
Cant Hooks.....	22
Callaud Battery.....	16
Carbon.....	17
" Plates.....	10
Chisels.....	51
Circuit Closer Knobs.....	35
Cleats.....	34
Climbers.....	28
Combination Sets.....	3
Conducting Cords.....	41
Connectors.....	34
Cords, Telephone.....	41
Crowfoot Battery.....	10
Cut-Outs.....	11
Daniell's Battery.....	17
Day's Kerite Insulated Wire.....	42-43
Digging Bar.....	32
Dynamo-Electric Machines.....	58
Directions for Batteries.....	23
Distriet Telegraph Supplies.....	15
Drive Screw.....	28
Duplex Telegraph Sets.....	4
Electric Bell Outfit.....	50
" Gas Lighting Apparatus.....	63
" Yellow Leaf.....	31
Electrical Incubator Outfits.....	65
" Lamp Cord.....	41
" Lamps.....	66
" Light Wire.....	41
" Motors.....	68
" Toys.....	67
Electro-Magnets.....	65
" Medical Apparatus.....	47-49
" Plating Outfits, &c.....	53-55
" Platers' Supplies.....	59-62
Elevator Cables, Patent.....	38
Experimental Apparatus.....	64-66
Fuller Mercury Bichromate Battery.....	21
Galvanometers.....	15-14
Gas Fixture Wire.....	36
Gasless Tubes.....	68
German Silver Wire.....	40
Glimmer.....	23
Gunda Prism Battery.....	21
Greenet Battery.....	19
Grove.....	17
Gutta-Percha Wire.....	30
Handle and Tool Holder.....	31
Hand Vises.....	28
Hatchets.....	31
Incubator Outfits.....	65
Insulation Outfits.....	65-66
Insulated Wires.....	30
Insulating Material.....	45
Insulators, all kinds.....	26-27
Iron Wire, Galvanized.....	24
" Insulated.....	24
Kerite Wire.....	42-43
Keys, Lever Knobs.....	35
" Champion.....	10
" Signal.....	10
" Telegraph.....	6-10
Knobs and Brackets, Porcelain.....	27
Lag Screws.....	28

	PAGE.
Lead Covered Cable.....	40
Learners' Instruments.....	8-9
Leclanche Battery.....	22
Lightning Arresters.....	12
Lane Building Material.....	24-25
" Tools.....	28-30
" Tapping (Lamps.....	32
" Wire Reels.....	32
Magneto-Bells.....	15
Magnet Wires.....	40
Message Hooks.....	55
Nickel-plating Battery.....	16
" Outfits.....	57
Office Tables.....	34
" Fixtures and Materials.....	34
" Wire.....	56
Oil Cans.....	53
Pike Poles.....	32
Pins for Cross-Arms.....	25
Platinum Wire.....	40
Pliers.....	30
Pulley Blocks.....	29
Pulleys and Tackle.....	28
Registers, American.....	1
" District.....	1
" European.....	1
" Keys.....	1
" Paper.....	1
" Reels.....	1
" Springs.....	1
" Weights.....	1
Relays, Box Sounding.....	4
" Giant Sounding and Steel Lever Key.....	7
" Pocket.....	7
" Polaroid.....	3
" Pony.....	3
" Standard.....	3
Repeaters, Antimagnetic.....	4
Rheostats.....	13-14
Rubber, Sheet.....	45
" Tapes.....	45
" Wire.....	36
Screwdrivers.....	28
Shovels and Spoons.....	32
Signal Boxes.....	15
Sinec Battery.....	18
Soldering Apparatus.....	31
Sounders.....	5-10
" Champion.....	10
" New Giant.....	5
" Repeating.....	7
" Snapper.....	65
Splicing Tools.....	28
Staples for Office Wires.....	34
Stationery.....	34
Stretchers.....	30
Switches, Circuit Changing.....	11
" Phil.....	11
" Plug.....	11
" Pole Changing.....	12
" Quirk.....	12
" Repeater.....	12
" Rubber Base.....	12
" Telephone.....	12
" Wood Base.....	12
Table of Resistances.....	37
" Wire Gauges.....	37
Tamping Bars.....	32
Tape Lines.....	33
" Telegraph Register.....	2
Self-Starting Ink Writing.....	15
Telephone Supplies.....	28
Tool Bags.....	28
" Belts.....	31
" Holders, Hollow Handle.....	33
Tools for Inspectors.....	30
Tree Trimmers.....	28
Vises and Straps.....	28
Window Tubes.....	24
Wire, Galvanized Iron.....	24
" Insulated.....	24
" Gauges.....	33
" Stretchers.....	30
" Underwriters.....	31
Wrenches.....	31



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